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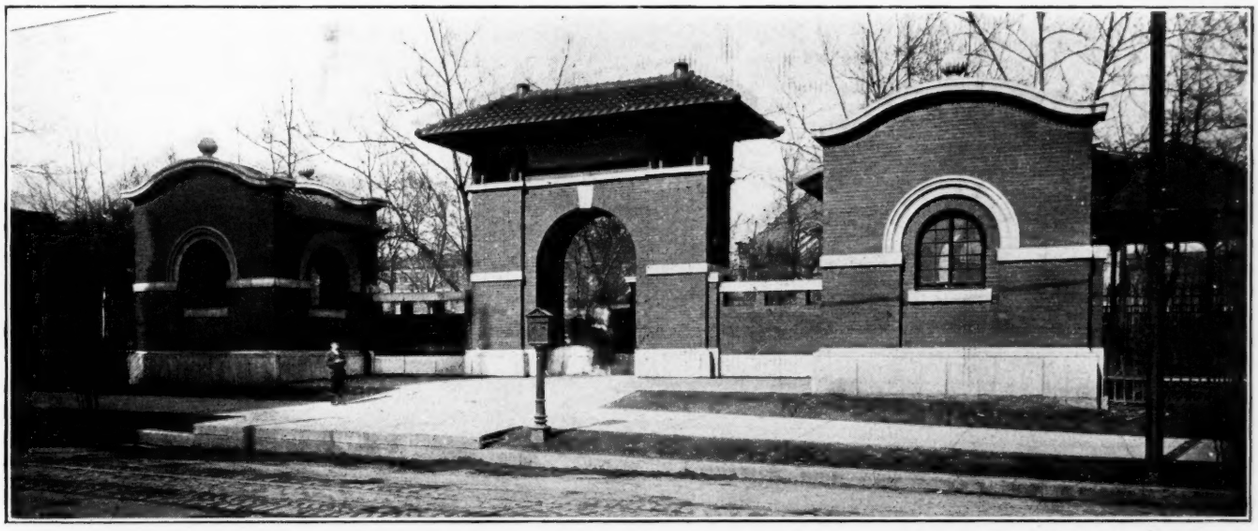


FRONT VIEW OF CARR SQUARE ENTRANCE AND COMFORT STATION

PARK ENTRANCE AND PUBLIC COMFORT STATION

Ornamental Brick and Stone Structure, Under Which are Shower Baths and Toilet Rooms—Used by Half a Million People in a Year—Details of Arrangement and Construction

By CHAS. CLAUDE CASEY

THE Park Department of St. Louis has given the patrons of Carr Park, one of the congested district breathing places, what seems to be an unusual building. It is an ornamental park entrance built over an underground bath house and comfort station.

As will be seen from the photographs, the structure has the appearance of a park entrance and would hardly impress anyone passing the street in front of the park as anything else. From the inside of the park it looks different only in that the two small buildings at each side of the entrance proper have doors, one marked "men" and the other "women."

Immediately in front of the entrance on the inside is another pillar, or wide post, of brick and masonry, and just beyond this is a stairway leading down in front of which is a heavy stone-capped railing and gate.

Another feature that makes the entrance unusual is that the paving, both inside and outside of the structure, is of glass—the ordinary vault lights so common in business districts but not often found in such locations. This makes a smoother walk, or pavement, than granitoid, the glass squares being set in an iron frame and cement. It also delivers sufficient light to the rooms below, which otherwise would be little less than dungeons.

The idea of the building originated in the park department of which Phillip C. Scanlan is the head, and the plans were drawn under the direction of C. M. Talbert, assistant to Andrew J. O'Reilly, then president of the Board of Public Improvements. Mr. Talbert is now first assistant to Maxime Reber, present head of the board, and supervised the construction.

The cost of the building was $16,500. It is a permanent structure of concrete, brick, stone and tile, the last being used for the roof covering and part of the floors. Marble slabs

separate the water closets in the comfort station, on both the men's and women's sides. The stairways are of steel and concrete, with iron railings.

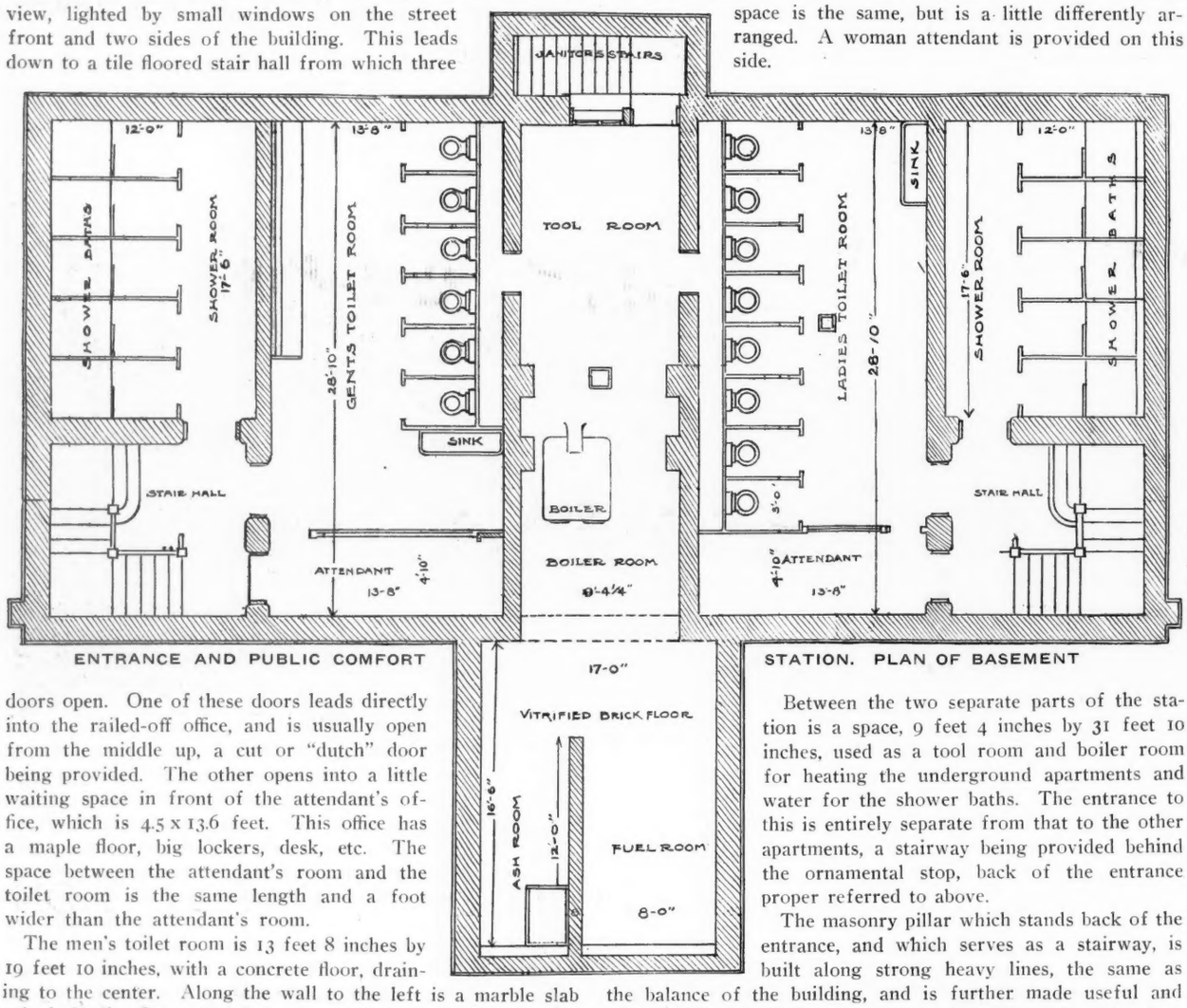
Though the widest part of the structure above ground, from front to back, is 12 feet, exterior measurement, the underground area is nearly 2500 square feet, or 31 feet 10 inches by 67 feet 8 inches, with a room 17 feet x 18 feet projecting from the main underground buildings under the sidewalk at the front of the entrance.

Entering the strong heavy door in the rear of the little buildings at either side, a stairway of ample size comes into view, lighted by small windows on the street front and two sides of the building. This leads down to a tile floored stair hall from which three doors open. One of these doors leads directly into the railed-off office, and is usually open from the middle up, a cut or "dutch" door being provided. The other opens into a little waiting space in front of the attendant's office, which is 4.5 x 13.6 feet. This office has a maple floor, big lockers, desk, etc. The space between the attendant's room and the toilet room is the same length and a foot wider than the attendant's room.

The men's toilet room is 13 feet 8 inches by 19 feet 10 inches, with a concrete floor, draining to the center. Along the wall to the left is a marble slab urinal, in the floor, draining to a sewer opening at its mid-length. This slab is 21 inches wide and 14 feet long. Along the wall to the right are six water closets, divided by marble slabs, each space being 3 feet by 4 feet 6 inches.

The third door opening from the stair hall opens into a shower bathroom. This is provided with five shower baths. It was originally intended to divide these with marble slabs into spaces 3½ feet square, with a tiny dressing room, 3½ x 4 feet, adjoining, provided with doors, but this idea was abandoned and the showers are all open.

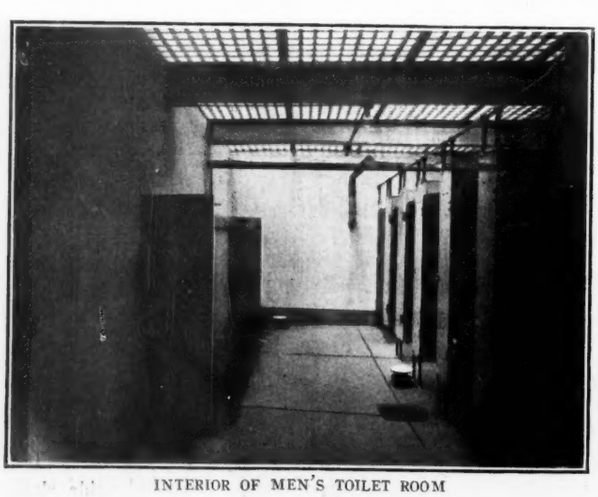
The women's side is the same as the men's reversed, except that two additional closets take the place of the urinal. The space is the same, but is a little differently arranged. A woman attendant is provided on this side.



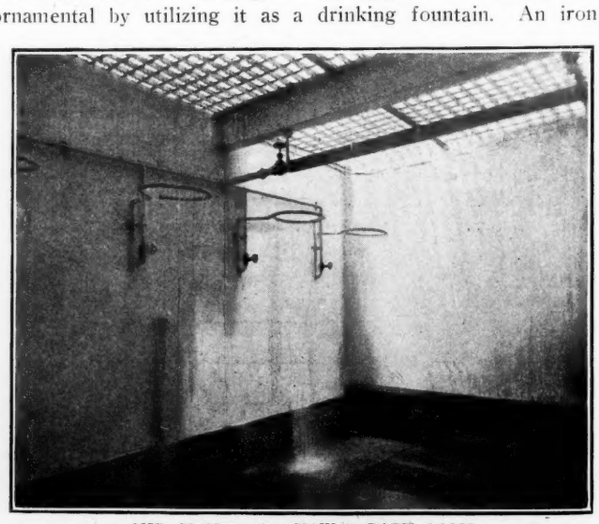
ENTRANCE AND PUBLIC COMFORT STATION. PLAN OF BASEMENT

Between the two separate parts of the station is a space, 9 feet 4 inches by 31 feet 10 inches, used as a tool room and boiler room for heating the underground apartments and water for the shower baths. The entrance to this is entirely separate from that to the other apartments, a stairway being provided behind the ornamental stop, back of the entrance proper referred to above.

The masonry pillar which stands back of the entrance, and which serves as a stairway, is built along strong heavy lines, the same as the balance of the building, and is further made useful and ornamental by utilizing it as a drinking fountain. An iron



INTERIOR OF MEN'S TOILET ROOM

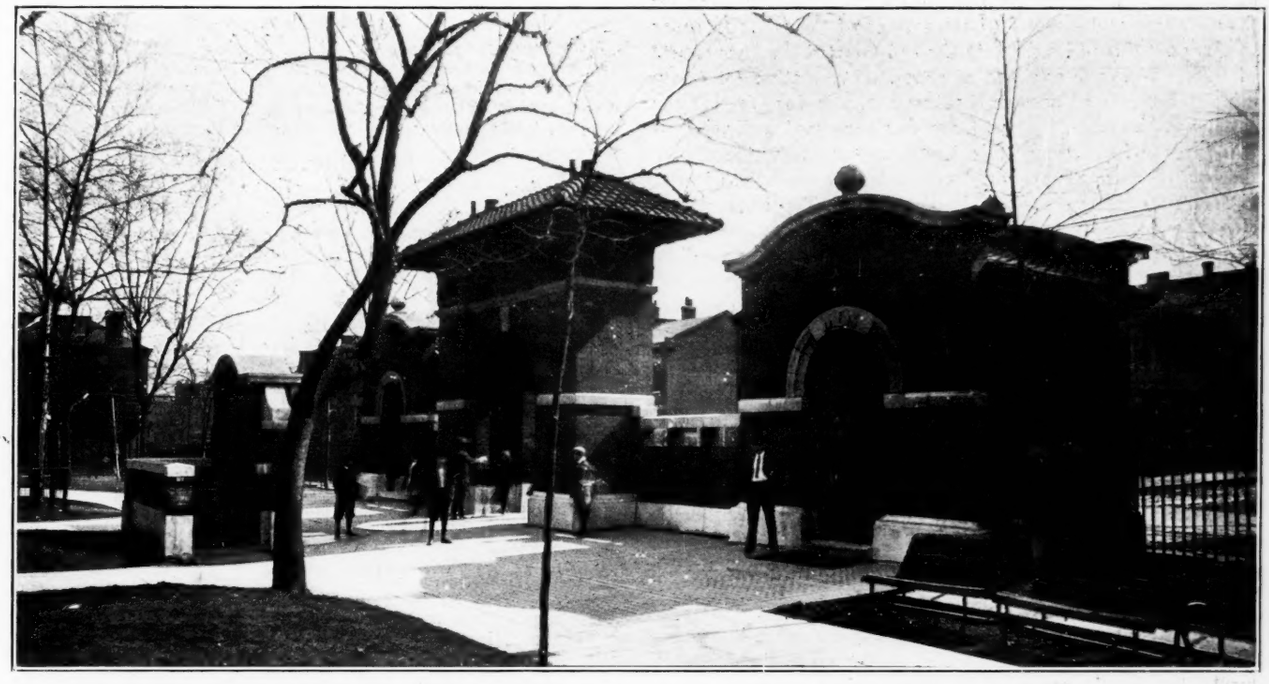


ONE CORNER OF SHOWER BATH ROOM

gargoyle projects from the center in front, delivering a small stream of water to the wide concrete basin below.

An ash room, 5 1/3 x 16½ feet, and a fuel room, 8 x 16½ feet, with vitrified brick floors, project under the sidewalk toward the street, with openings in the walk for dumping coal and removing ashes.

To render the underground rooms dry, a coating of coal tar pitch 1 inch thick was applied to the outside of the concrete walls. This makes the rooms as dry as they would be if above ground.



ENTRANCE AND COMFORT STATION VIEWED FROM INSIDE PARK

The comfort station is used by thousands of people in the summer months when the park becomes the front yard of the people living in the tenements of the congested district. It has been estimated by the park department that fully 1,000 people live in each of the blocks that bound Carr park. Benches are placed close together in the one-block breathing space, but in good weather during the summer it is difficult to find an empty space on a bench at night. Occasional public band concerts add greatly to the attendance at the park.

Figures kept by the park department show that 338,162 men, women and children used the comfort station privileges of the building in the nine and a half months between April 6, 1910, when it was opened, and January 29 last, the latest figures available.

It was intended originally to make the little shower bath rooms of service to the general public, but another and larger bath house has been built eight or ten blocks away, and the general purpose of the new place was abandoned. It is used daily by several thousand children, however, during the playground season. Boys and girls by the dozen run into the apartments assigned to their use and after stripping to the skin stand under the cool showers to wash off the dirt and perspiration after their healthful play.

Two sinks, with towels, are provided also, one on each side, for the use of the public. On the men's side the sink is in the little waiting space just outside the attendant's railing; but in the women's side it is set back against the wall in the end of the toilet room.

Two attendants are employed all the year around, one for the men's side and one for the women's. These employees also serve as janitors and keep the places clean. The park keeper is in charge.

ACID MINE DRAINAGE AND POLLUTION

(From Annual Report of Board of Health of Altoona for 1910.)

IT has long been the opinion of those who have studied the health conditions of Altoona that the city water was comparatively free from bacterial life, and that the acid condition due to mine drainage from the Baker and Glen White mines was an important factor in maintaining that condition.

The results of a series of experiments made by the Pennsylvania Department of Health indicate that this opinion has a solid foundation. The conclusions arrived at in the laboratories of the Health Department are as follows: "Mine drainage will prevent the growth of typhoid bacilli after the lapse of one hour. Mine water will markedly limit the growth of colon bacilli so that they die off progressively and cannot be cultivated after a lapse of twenty-four hours. The organisms lived for three days, but could not be found on the fourth day in one experiment in which the dilution was high." "The only inference that can be drawn from the experiments is that, so far as the risk of the most serious of all water pollutions is concerned, that by the typhoid bacillus and its companion and index, the colon bacillus, and inferentially the cholera bacillus, which is known to succumb readily to sulphuric acid, the attempt to exclude mine water from streams which may eventually become sources of drinking water would be a mistake. Evidently neither of these organisms can live for any considerable time in water containing these wastes in any appreciable quantity. Especially is this true of that most dangerous and elusive bacillus, that of typhoid fever. Data are not yet available to indicate to what distance from the mine the protective influence of these wastes will extend." Since the only sewage that finds its way into our water supply is at the head of the streams, and for the most part above the mines, the distance from the mines to which the protective influence of the drainage would extend is not of much importance to us.

In the same report attention is called to the fact that during high water in the streams, when the water is coming down in torrents, the volumes of fresh water overcome the acidity of the mine waters and, the dilution being sufficient, preclude any germicidal effect of the acid mine water. In the Altoona water supply, however, this danger is reduced to the minimum by the flood channel, which, running parallel with the reservoirs, carries away all the water during heavy rains.

SEWAGE DISPOSAL EXPERIMENTS

Conducted in Philadelphia During Past Two Years — Screening and Sedimentation — Contact, Sprinkling and Intermittent Filters — Sludge Disposal

In 1905 the Pennsylvania State Legislature passed an act authorizing the Commissioner of Health, the Governor and Attorney-General to prevent the discharge of sewage into any of the waters of the State, and in exercising this authority they directed the city of Philadelphia to submit to the Department of Health, on or before the year 1912, a comprehensive plan for the collection and disposal of the sewage of the city. In order to carry out this order the City Council directed the Department of Public Works to establish an experimental station for studying the methods of sewage disposal available for treating the sewage of the city. In 1908 there was organized a division of the Bureau of Surveys of this department known as the sewage disposal division, which was placed under the direction of principal assistant engineer Geo. E. Datesman. The assistant engineer in charge from Sept. 21, 1908, has been W. L. Stevenson. There have also been engaged in this work a chemist, an assistant chemist and a bacteriologist. This operating force began experimental work on March 23, 1909, and continued the same until May 15, 1910. A description of the experimental station and of the experiments then being conducted was published in Municipal Journal and Engineer for October 27 and November 3, 1909.

The Bureau of Surveys has just published a report of the experiments conducted and the results and conclusions derived therefrom, this giving a full and complete description of all apparatus and methods, with tables and diagrams and also photographs of the apparatus, the whole forming a very complete statement of the experiments conducted and containing a great deal of valuable information concerning practically all methods of sewage disposal which have come into general use. We hope in future issues to abstract a number of the more interesting and important descriptions of the results from these experiments, but for the present will give merely a summary of the conclusions as found in the report. These, it will be seen, cover screening and sedimentation, slate and ordinary contact beds, sprinkling filters, sand filters, disinfection and dilution; also a special consideration of sludge and the methods of disposing of it. This summary is of considerable interest, but it fails to give any indication of the many small points in connection with the construction and maintenance of sewage disposal plants which were studied and elucidated by this investigation.

SUMMARY OF CONCLUSIONS

Fine Mesh Screening

The 35 mesh per inch screen removed one-third of the suspended matter in the crude sewage as applied; prevented the formation of scum in subsequent sedimentation tanks, and prevented the clogging of nozzle orifices on the sprinkling filters.

Sedimentation

For the purpose of comparison, the results of sedimentation are given in percentage removal, although it is recognized that effluents which are produced with equal percentage removal are not comparable on the basis of solids content.

Horizontal Flow

Three and one-half hours nominal flow through a baffled sedimentation tank removed two-thirds of the suspended solids in the crude sewage; an increased storage did not produce a proportionate improvement in the efficiency of the tank. Baffling by equalizing velocity through the cross-section prevented dead spots in the tank and restrained sludge and scum at the inlet end.

Between periods of three and a half to six hours' flow the influent was not deoxidized nor rendered offensive when sprayed upon sprinkling filters. To prevent septic action the tanks required sludging and washing out every six weeks.

Vertical Flow

The Emscher or Imhoff tank studied illustrated the principle involved, inasmuch as the substantial separation of the sewage flow from the digesting sludge keeps the sewage fresh and eliminates offensive odors either in the effluent, the sludge or in the gas developed.

The removal of suspended solids from the crude sewage was but little more than one-half due to the shallowness of the tank; the efficiency may be increased in tanks of working size.

Slate Contact Beds

The best results were accomplished when this bed was filled twice a day or at a rate of two million gallons per acre per day.

Crude sewage applied deposited three-fourths of the suspended solids; the effluent was slightly nitrified and rendered partially stable.

The deposit on the slates was inodorous, resembling earth, and could be removed by flushing in the small size bed experimented with.

Where slates are not a waste product the construction of the bed would be costly.

Contact System

The primary and secondary beds treating settled sewage did not mature sufficiently to yield a stable effluent, although it was very low in suspended matter. The highest rate obtained was 1,350,000 gallons per acre per day. With sewage containing less trade waste better results might have been obtained.

Sprinkling Filters

Distribution.

Best results were obtained with fixed sprinkler nozzles when the film of sewage was made to constantly travel back and forth over the media, without a resting period; this caused a uniform rate of flow from the underdrains.

Rate of Operation

A regular uniform rate of operation produced better results than the same net rate obtained irregularly. With filters exposed to the weather and receiving sewage partially settled the maximum rate obtained was two and a half million gallons per acre per day, but in the winter the stability of the effluent deteriorated.

With a filter protected from the weather, having fine screened and settled sewage uniformly distributed over its surface, and having a ventilating system, the maximum rate used was three and one-tenth million gallons per acre per day. The effluent was practically always stable. How far this would have been affected by exposure to the weather was not determined.

Kind of Media

Trap and gravel maintained their initial size. Limestone and slag disintegrated to a slight extent.

The smooth surface of the gravel stones was not as well adapted to the formation of a bacterial jelly as rougher media, and the extreme roughness of slag caused it to retain the deposited solids.

The rough, irregular cinders removed all the suspended matter from coarsely screened sewage, so that clogging soon ruined the bed.

Size of Media

The completeness of preliminary treatment partially controls the size of media in subsequent filtration.

In filters exposed to the weather and receiving sewage partially settled, operating at two and a half million gallons per acre per day, best results were obtained from trap media one inch to three inches in size. Under the more favorable conditions of fine screened and settled sewage as an influent uniformly distributed, at a rate of three and one-tenth million gallons per acre per day, media three-quarters inch to one and a half inches produced an excellent effluent.

Depth of Bed

Filters of less depth than six feet were not satisfactory, but from filters six feet or more in depth effluents could be obtained at rates between two and a half and three million gallons per acre per day of satisfactory quality. The additional depth over six and one-half feet did not seem to be economical.

Maturing

Filters exposed to the weather, receiving sewage partially settled, and put in operation in March, yielded a satisfactory effluent in three weeks, and after three months the effluent was perfectly stable.

A filter protected from the weather, having fine screened and settled sewage uniformly distributed over its surface, and put in operation in July, yielded a perfectly stable effluent after one week of service.

Unloading

In filters operated at rates between two and one-half and three million gallons per acre per day media composed of stones approximately uniform in size completely unloaded the solids stored up in the interstices, whereas media composed of stones of great diversity in size became badly clogged but did not unload.

Effect of Freezing Temperature

No trouble was experienced from the formation of ice upon the surface of the filters; biological activity was decreased by

the low temperature to such an extent, however, that at a rate of two and one-half million gallons per acre per day the fine grain and graded mixture beds pooled and the effluents of all the exposed filters were of lower stability than in summer.

Elimination of Surface Growth

Fungus growths on the surface were completely removed by an application of calcium hypochlorite dissolved in water.

The continual disinfection with calcium hypochlorite of the influent to a filter maintained its surface in perfect condition and did not interfere with the biological action of the bed.

Bacterial Efficiency

The average number of bacteria in the effluent of a mature sprinkling filter operated at rates between two and one-half and three million gallons per acre per day was 400,000 per c.c., which represented a removal of 86 per cent from the crude sewage.

Bacterial efficiency within a limited range of small size stone was proportionate to depth of bed.

Settlement of the Effluent

When the effluent was passed through a settling basin in two hours much improvement was obtained by the removal of the suspended matter.

Hamburg and Intermittent Sand Filter

A filter modeled after the so-called Hamburg type, in which distribution is effected by a layer of fine coke; also a shallow, coarse size sand filter both operated at too low a rate to be economical for the conditions in Philadelphia.

Disinfection

Fresh sewage from which suspended matter larger than 1/25 inch had been removed was disinfected to a practical degree with calcium hypochlorite; the amount of disinfectant required depended upon the amount and condition of the organic matter in the sewage.

Economy of design and operation can be attained by short storage and mechanical agitation to insure contact of the disinfectant and the sewage.

Dilution

Crude sewage when passed through a fine-mesh screen or satisfactorily settled to remove the solids larger than 1/25 inch, and disinfected with calcium hypochlorite to yield six parts per million available chlorine, was added to river water in proportions up to one to ten, and its purification accomplished without offense to sight or smell nor the depletion of the dissolved oxygen of the river water below 50 per cent saturation.

Sludge

Amount

Horizontal flow in sedimentation tanks produced sludge 88 per cent moisture at an average rate of five cubic yards per million gallons sewage.

An Emscher tank with 4½ feet vertical flow produced sludge 82.6 per cent moisture at an average rate of 9/10 cubic yard per million gallons sewage.

Condition

Cleaning plain sedimentation tanks caused considerable offense, but the sludge withdrawn from the Emscher tank had a tarry odor and was not offensive.

Scum formed on sedimentation tanks except when the influent was screened.

Digestion

The placing of sludge from a sedimentation tank in a watertight, uncovered tank for digestion did not prove successful.

Lagooning

Wet sludge from plain sedimentation tanks placed in earth lagoons to a depth of 12 inches in moderate weather dried to a consistency fit to remove within the six weeks elapsing between cleaning tanks, and its volume was 4/10 of that applied.

Sludge Bed

Fine sand or sawdust over a coarse stone drainage floor was more efficient for reducing moisture in sludge than a plain earth lagoon.

Wet sludge from a sedimentation tank, applied six inches deep in winter weather, under cover, dried to a consistency fit to remove in six days, and under the same conditions but not under cover in twelve days.

Based upon small size tests in winter weather, Emscher sludge 12 inches deep upon a sand bed dried to a consistency fit to remove in 12 days during freezing weather. In Germany the time is given as from four to five days, but sludge is not withdrawn in freezing weather, which accounts for the difference.

When equal weights of rice coal and wet sludge were mixed and placed on sludge beds, the mixture was fit to remove in one day, and was successfully burnt.

STANDARD PAVING SPECIFICATIONS

Adopted This Year by Association for Standardizing Paving Specifications — Concrete Pavements, Foundations and Sidewalks — Wood Block

THE standard specifications adopted by the Association for Standardizing Paving Specifications at its February meeting have finally been published in the *Proceedings* of the society. These *Proceedings* and the specifications therein have been copyrighted, "Not for the purpose of limiting the use of the matter herein to members of the association only. On the contrary, the legitimate use of the same will be granted gratis to those who make written application to the Executive Committee, stating exactly what part or parts of the *Proceedings* it is the desire to use and for what purpose."

In general most of the new specifications follow very closely those adopted last year and published by us at that time, although certain of them are practically new throughout. In view of the fact that last year's specifications were published by us complete it does not seem worth while to repeat the unchanged portions, but we will indicate where changes have been made, referring to the pages in Volume XXVIII (January to June, 1910) of MUNICIPAL JOURNAL AND ENGINEER. Secretary Hittell has granted permission to make such extracts on condition that we make the following statement in connection therewith: "By permission of the association these extracts are reprinted from the copyrighted *Proceedings* of the Association for Standardizing Paving Specifications. John B. Hittell, secretary-treasurer, 5917 Winthrop Avenue, Chicago."

CONCRETE PAVEMENTS AND FOUNDATIONS

On pages 362 to 364 of MUNICIPAL JOURNAL AND ENGINEER were published standard specifications for cement, concrete sidewalks, curb and combined curb and gutter, concrete pavement foundations and concrete pavements. The specifications this year follow these exactly so far as the cement is concerned. In the specifications for concrete sidewalks the only change is the addition of a paragraph as follows:

"The base shall be — inches in thickness, with its upper surface finished parallel to and — inches below the grade of the finished sidewalk. The minimum thickness for base shall be 3 inches."

Under the head of Forms, the new specifications read, "The forms shall be well staked and thoroughly braced and set to the established lines," the words "thoroughly braced" being new.

Under the head of Top or Wearing Surface appears the new paragraph, "This wearing surface shall be — inches in thickness. The minimum thickness for wearing surface shall be ½ inch."

Also the following has been added: "No concrete shall be mixed while the air temperature is below 32 deg. Fahr., and if this temperature is reached at any time before the wearing surface is laid, the foundation or other concrete shall be immediately provided with such covering as will protect it from all damage. In no event shall concrete walks be laid on a frozen foundation."

The specifications for concrete curb and combined curb and gutter have been changed by the addition of the same paragraphs as to thickness and laying in freezing temperature as were just quoted. Also the second paragraph of article 11 is changed and added to to read as follows:

"The mortar for the facing shall be mixed in a mortar box and spread in place immediately after mixing. The facing or wearing surface of the curb shall be placed on the inside of the forms as the body of the curb is being built up. In no case shall the facing be placed after the base has set."

The specifications for concrete pavement foundations are similar to the old except for the addition of a paragraph on thickness similar to that for the thickness of concrete sidewalk foundations (with a minimum thickness of 4 inches instead of 3) and the paragraph concerning laying in freezing

temperature already given; and with article 9 changed to read as follows: "When completed, the foundation shall be kept moist for not less than two days and it shall be protected from traffic until the concrete has thoroughly set."

The specifications for concrete pavements are unchanged except for the addition of the paragraph concerning laying in freezing temperature, and another on thickness similar to that for the thickness for concrete sidewalk foundations, with a minimum of 5½ inches. There was also suggested by the committee a paragraph on guarantee, but the committee was unable to agree upon the time, some favoring no guarantee beyond one year, and others favoring a five-year period. This was discussed by the convention, which voted to recommend a two-year guarantee, the vote being two to one.

The Committee on Cement and Concrete Pavements was composed of the following: N. E. Murray, chairman, superintendent of sidewalks, Board of Local Improvements, Chicago, Ill.; James E. Faris, member Board of Public Works, Kansas City, Mo.; L. J. Myers, city engineer, Ardmore, Okla.; J. E. Ramsey, consulting engineer, Salisbury, N. C.; A. F. Damon, Jr., consulting engineer, Chester, Pa.; W. H. Broadhurst, chemist, Borough of Brooklyn, New York City.

Wood Block Pavement

The specifications for wood block pavement adopted last year were published on pages 320 to 321 of Municipal Journal and Engineer. In these the following changes are made this year. Instead of specifying that the wood to be treated shall consist of "long leaf yellow pine," "Southern yellow pine" is substituted. Similarly in the second paragraph, which began "Yellow pine blocks shall be cut from what is known as prime timber, namely, all timber must be sound, commercial long leaf yellow pine," the new specifications state "Yellow pine blocks shall be made from what is known as Southern yellow pine." The third paragraph is changed to read, "In yellow pine timber the annual rings shall average not less than eight to the inch and shall in no case be less than four to the inch, measured radially."

In the description of the oil to be used there are several changes. Article 1 is changed to read "The specific gravity shall not be less than 1.10 nor more than 1.14 at a temperature of 38 deg. C." In the second paragraph 3 per cent is changed to 3½ per cent. In the third paragraph for the words "35 per cent up to 315 deg. C." are substituted "and shall be not less than 30 or more than 40 per cent up to 315 deg. C." The words "the mean of three determinations to be taken" are omitted.

The paragraph on Filler is changed to read "The joints between the blocks shall be filled with pitch, asphalt residuum or dry, fine sand. (The committee recommends sand for heavy traffic streets.)"

Under the head of Expansion Joints it is specified that these shall be one inch in width and placed every 100 feet, instead of ½ inch in width and placed every 50 feet, as last year.

To these specifications is added an appendix giving a description of the method of analyzing coal tar creosote, which is referred to in article 3 of the specifications for oil, being an extract from Bulletin No. 65 of the American Railway Engineering and Maintenance of Way Association. This appendix is reprinted on page 520 of this issue.

The committee stated that it had considered the matter of the preservative very carefully and "found that the oil specified may not only be produced in the open market at reasonable cost, but also may be manufactured by any one competent and willing to erect the necessary plant, and this plant, moreover, would not be prohibitive from a financial standpoint. The committee is satisfied, from the testimony of the different parties examined and from the experience of its own members, that the oil with a specific gravity of 1.10 is best suited for treating wood blocks, when it is considered that a waterproofing as well as a preservative compound is desired." The committee recognized that this oil "is not a direct product of distillation, but is formed by the addition of a coal tar pitch. It has accordingly changed the positive amount of 35 per cent heretofore specified as the maximum to be distilled up to a temperature of 315 deg. C. to the variable amount of not less than 30 nor more than 40 per cent."

The Wood Block Committee was composed as follows: George W. Tillson, chief engineer, Bureau of Highways, Borough of Manhattan, New York City; Andrew Rinker, city engineer, Minneapolis, Minn.; N. S. Sprague, superintendent Bureau of Construction, Department of Public Works, Pittsburg, Pa.; James C. Travilla, member Board of Public Improvements and street commissioner, St. Louis, Mo.; M. F. McKenna, city engineer, Bridgeport, Conn.; Felix A. Norden, member Board of Local Improvements, Chicago, Ill.; W. P. Taylor, engineer of tests, Philadelphia, Pa.; Walter M. Cross, city chemist, Kansas City, Mo., and Cassius W. Kelly, city engineer, New Haven, Conn.

The new specifications for the other kinds of paving will be given next week.

FUEL BRIQUETS FROM STREET RUBBISH

The following statement by U. S. Consul Frank W. Mahin, of Amsterdam, Holland, is published in the Consular and Trade Reports.

Hitherto rubbish collected by street cleaners in Amsterdam has been assorted; paper, rags, metals, and glass have been sold to dealers therein, the residue as manure.

The city authorities are now considering converting the street rubbish as a mass into combustible briquets for heating boilers. They have found that at Southwark, London, and at St. Ouen, France, street rubbish is transformed into a marketable product. At Southwark all the refuse is crushed to a powder, which is sold as a manure. At St. Ouen the powder thus made, with the addition of combustible substances, is formed into a cheap fuel. The Amsterdam authorities experimented at both those places, combining powder made there with coal tar from the Amsterdam gas works and pressing the substance into briquets. The experiment was successful and disposed the Amsterdam authorities toward establishing a plant for producing briquets from street rubbish.

The quantity of material which can be worked in this city is about 140,000 tons a year. It is estimated that an establishment to work this will cost about $200,000; that the annual expense thereof will be about $98,000; that the product will be about 85,000 tons, costing $1.15 a ton. It is believed that the briquets can be sold for a net price of $1.40 a ton, which would yield a profit of over $20,000 a year. At present the street refuse of Amsterdam is disposed of at a loss of $18,000 a year. Besides the anticipated financial profit, it is reasoned that the danger in times of epidemic will be much reduced by this transformation of street refuse, which amounts to destruction.

WALLINGFORD MUNICIPAL ELECTRIC PLANT

In the report of the municipal electric plant of Wallingford, Conn., for the year ending 1910, the finances of the plant are set forth in great detail, the accounts including insurance of boilers and building, office rent, interest, depreciation, legal expenses and apparently all other legitimate expenses which should be charged against it. After deducting these from the income there is left a balance of $5,663.77. There probably should be a deduction from this for interest, since the amount of interest paid was but $1,925, whereas the value of the plant is about $120,000. This, however, would still leave a balance of about $2,800.

The average watts developed by the steam plant per pound of coal consumed was 151, or the average pounds of coal per kw. of output was $6.64. The coal cost $4.08 per ton delivered at the plant and the average cost per kw. for fuel was 1.37 cents. The average total cost per kw. at the steam plant was 5.4 cents. About 36 per cent of the output was developed by a water plant, and the cost per kw. here, including 5 per cent interest and 5 per cent depreciation, was 1.62 cents. The total output for the entire year was 549,365 kw. The total income averaged 6 cents per kw. generated.

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CHANGE OF ADDRESS

Subscribers are requested to notify us of changes of address, giving both old and new addresses.

Contributions suitable for this paper, either in the form of special articles or of letters discussing municipal matters, are invited and paid for.

Subscribers desiring information concerning municipal matters are requested to call upon MUNICIPAL JOURNAL AND ENGINEER, which has unusual facilities for furnishing the same, and will do so gladly and without cost.

APRIL 12, 1911.

CONTENTS

Philadelphia Sewage Disposal Experiments

THE city of Philadelphia has conducted for a little over a year a series of experiments on sewage disposal which are of great interest and value to engineers and others engaged in the study and practical adaptation of sewage disposal methods. The experiments of the Massachusetts State Board of Health and the reports upon the same, which are unsurpassed for completeness and scientific thoroughness, are recognized in Europe as well as in this country as being of the greatest importance and reliability, although their value has been somewhat restricted during the past few years by a conservatism in the adoption of new ideas which seems to us unnecessary and unfortunate. The tests conducted by the cities of New Orleans and Columbus added greatly to our information concerning some of the later methods of sewage treatment and probably had considerable effect upon the general adoption of certain of them, although neither introduced any new methods.

The Philadelphia experiments in turn have supplied us with data concerning some still more recent ideas, especially screening and sedimentation tanks, including the Emscher tank; with certain conclusions as to details of sprinkling filter construction and as to results which can be obtained with the use of hypochlorite in adapting more or less crude sewage to disposal by dilution. Especial attention was paid to the subject of the disposal of sludge, which still remains one of the most serious and least satisfactorily solved problems of sewage disposal.

While much of the report published by the Philadelphia investigators consists of tables and data which are too voluminous for publication in a periodical, and which would be of value chiefly to experts, there were a great many deductions drawn from these bearing upon minor points of construction and operation which are not given in the general summary of conclusions published this week, and these we are expecting to give abstracts and synopses of from time to time during the next few weeks.

Paving Specifications

ANOTHER publication of more than ordinary interest which has just reached us is the *Proceedings* of the Association for Standardizing Paving Specifications, containing the specifications revised and adopted by that association in February of this year. Considering the short time which has elapsed since the convention for the publication of the *Proceedings* these have been gotten out in very good shape and with comparatively few typographical errors. Our chief criticism is that they do not contain the specifications as finally decided upon in those cases where they were amended or added to by the convention as a body, but give the specifications as reported from the committees, any modifications made by the convention as a whole being given elsewhere as a part of the proceedings. It seems to us that it would have been better to have interpolated such changes and additions at the proper places in the specifications as reported, noting, if it seemed desirable, that these were variations from the original report.

Except for two or three points concerning which satisfactory conclusions were not reached we believe that these specifications are considered by the association as being final so far as it is concerned, and recommended to all cities for adoption. While the association has copyrighted these in order that they may not be used commercially, it is their desire that they be adopted generally by all cities; and in furthering this we are expecting to publish all of them where they are entirely or largely new, or to note the changes made from those of last year where these are few in number. This week we take up the specifications for concrete pavements, pavement foundations and sidewalk work and those for wood block pavements. These will be followed during the next two or three weeks with a presentation of the remaining specifications adopted by the association.

Material for Water Conduits

IN a report upon a new water supply for Cumberland, Md., by Mr. James H. Fuertes, a brief discussion is given of the material available for constructing a conduit several miles in length. Concerning this the report says:

The estimates of cost of the conduits for bringing the water from distant sources are based upon the use of wood stave pipe for pressures up to about 90 pounds per square inch. Where the pipe lines cross deep ravines and the pressures on the pipes would be in excess of 90 pounds per square inch, riveted steel pipe or cast iron pipes have been provided for, depending upon the pressures and on the location. As a rule, it is proposed to use cast iron pipes under all important stream crossings.

Wood stave pipe is an approved and well tried form of construction for pipe lines operating under moderate heads, and when properly built of suitable materials and when the alignment is laid out with due regard to the hydraulic questions involved, is a durable, substantial and useful form of construction. Its cost is only about one-half that of steel pipe of equivalent carrying capacity and about one-third that of cast iron, while its life, when intelligently designed and constructed, should be as great as that of either cast iron or steel.

Another very important advantage is that their cost is so low that they could be replaced at least three times for the cost of one cast iron pipe line, and this low cost of construction frequently makes it possible to bring the total investment necessary within the limit of expenditure possible to a city when the cost of a long cast iron pipe line might be prohibitive.

The statements as to cost are probably for that locality only, and the relations between the costs of the several kinds of pipe might be constantly different in other sections of the country. Engineers should, however, bear in mind the practicability of using not only the materials herein referred to, but even certain additional ones, such as vitrified clay with water-tight joints where the head is very light. There is too often a tendency to confine oneself to materials which have been used in former work, forgetting to consider the possibilities of others which may be not only cheaper but better adapted to meet the requirements of the case.

Analyzing Coal Tar Creosote

Extract from Bulletin No. 65 of the American Railway Engineering and Maintenance of Way Association. See page 518 of this issue.

Sample

In view of the fact that everything depends upon the samples taken for analysis, too much care cannot be used to make sure that such samples are strictly average ones of the whole bulk of the oil.

To this end the oil should be completely liquefied and well mixed before any samples are taken. Wherever possible, a drip sample of not less than 2 gallons should be taken, commencing after the oil has started to run freely. Where this cannot be done, as, for instance, in large storage tanks, samples should be taken from various depths in the tank, by means of a tube or bottle, the number of samples depending on local conditions.

For taking samples during the process of treatment, it is desirable to take a sample of oil from the storage tank about one foot from the bottom of the tank before the cylinder is filled, and, where possible, a sample directly from the cylinder during the process of treatment. For this purpose a thermometer well, as shown in attached figure, is recommended.

The sample to be analyzed should be thoroughly liquefied by heating until no crystals adhere to a glass stirring rod, and also well shaken, after which one-half shall be taken for analysis and the balance reserved as a check test.

Apparatus

The apparatus for distilling the tar oil or creosote must consist of a stoppered glass retort similar to that shown in the diagram, having a capacity as nearly as can be obtained of 8 ounces up to the bend of the neck when the bottom of retort and the mouth of the offtake are in the same plane. A nitrogen-filled mercury thermometer of good standard make, divided into full degrees centigrade, must be used in connection therewith. The bulb of the retort and at least 2 inches of the neck must be and remain covered with a shield of heavy asbestos paper, shaped as shown in diagram, during the entire process of distillation, so as to prevent heat radiation, and between the bottom of the retort and the flame of the lamp or burner two sheets of wire gauze, each 20-mesh fine, and at least 6 inches square must be placed.

It is also recommended that the flame be protected against air currents. An ordinary tin can from which a portion of the bottom and all of the top have been removed, placed on a support attached to the burner, as shown on the diagram, has been found to answer the purpose.

Distillation

Before beginning the distillation the retort should be carefully weighed and exactly 100 grammes of the oil placed therein, the same being placed in the retort. The thermometer should be inserted in the retort with the lower end of the bulb ½ inch from the surface of the oil, and the condensing tube attached to the retort by a tight cork joint. The distance between the bulb of the thermometer and the end of the condensing tube should not be less than 20 nor more than 24 inches, and during the progress of the distillation the thermometer must remain in the position originally placed.

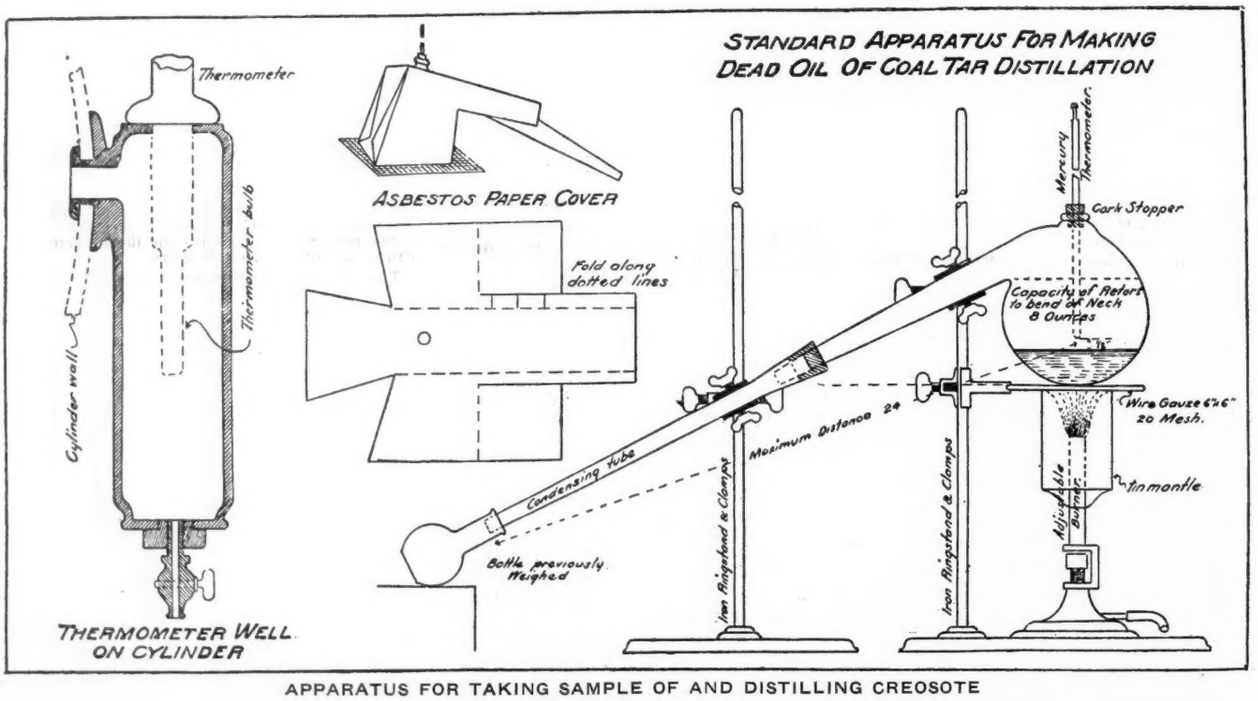
The distillates should be collected in weighed bottles and all fractions determined by weight. Reports are to be made on the following fractions:

0 to 170 degrees Centigrade.
170 to 200 degrees Centigrade.
200 to 210 degrees Centigrade.
210 to 235 degrees Centigrade.
235 to 270 degrees Centigrade.
270 to 315 degrees Centigrade.
315 degrees Centigrade and above.

For practical purposes there will be no need of reporting on all of these fractions. It will be sufficient to report on the fractions as follows:

Below 200 degrees Centigrade.
200 to 210 degrees Centigrade.
210 to 235 degrees Centigrade.
235 to 315 degrees Centigrade.
Above 315 degrees Centigrade.

Reports are to be made on individual fractions. In making such reports it is to be distinctly understood that these fractions do not necessarily refer to individual compounds. In other words, the fractions between 210 and 235 deg. will not necessarily be all naphthalene, but will probably contain a number of other compounds. The distillation should be a continuous one, and should take about 45 minutes. When any measurable quantity of water is present in the oil, the distillation should be stopped, the oil separated from the water and returned to the retort, when the distillation should be recommenced and the previous readings discarded. In obtaining water-free oil it will be desirable to free about 300 to 600 c.c. of the oil by using a large retort and using 100 grammes of water-free oil for the final distillation. In the final report as to fractions a correction must be made of the amount of water remaining, so that the report may be made on the basis of a dry oil.



APPARATUS FOR TAKING SAMPLE OF AND DISTILLING CREOSOTE

NEWS OF THE MUNICIPALITIES

Current Subjects of General Interest, Under Consideration by City Councils and Department Heads—Streets Water Works, Lighting and Sanitary Matters—Fire and Police Items—Government and Finance

ROADS AND PAVEMENTS

Buy New Roller

Burlington, Ia.—The city has purchased an eight-ton tandem roller for use in repairing and improving streets. This new roller is a small brother of the huge steam roller which the city now owns, and is also propelled by steam. It is easier to handle and gets over the ground quicker and may be used in many places and at times when it is not possible to move the big roller. The list price of the new machine is $2,500, the city getting a good reduction. It is the intention of keeping the larger roller for heavy work and for spiking macadam. By inserting spikes in the wheels this heavy contrivance can tear up a macadam street just as easily as it can pack the stone.

Want Park Board to Have Charge of Street Opening

Bloomfield, N. J.—To avoid litigation in the proposed opening of a new Mechanic street in Bloomfield to take the place of the one vacated by the Town Council of Bloomfield for the Lackawanna Railroad improvements, forty residents of the First district of the Third Ward at a meeting held at the home of Assistant Postmaster John R. Conlan last week voted to appeal to the Legislature for relief. To this end a committee was appointed to endeavor to get a bill through the Legislature to bring the property southwest of the present Mechanic street into the care of the Essex Park Commissioners. The object of getting the proposed bill through is to have a boulevard as an approach to the new depot from East Orange, extending to Glen Ridge on the north and eventually to the park system in Montclair. Such a bill, if passed, will eliminate the assessment and litigation that may arise for damage suits in the opening of the new street.

Demand Sewers Be Laid Before Paving

Springfield, Ohio—Threatened with an injunction suit unless time was first given in which a sewer can be put down in East High street from Limestone to Spring, Service Director Klein will not allow this section of East High street to be finished until some sewer connections are established. Frank Mills, president of the Pythian Castle Company, called upon Mr. Klein yesterday afternoon and told him that an injunction suit would be filed should the contractors attempt to tear up the southern half of the street before a sewer is installed. "We cannot build unless we have sewers," said Mr. Mills, "and we will have to have them put in first." Mr. Klein said it would be several weeks before the work was finished, and the sewer could be put in in the meantime, and that he expected no trouble. Work of tearing up the old pavement started yesterday.

Laid a Million Yards of Paving in Six Years

New Orleans, La.—City Engineer W. J. Hardee has sent the following letter to Mayor Martin Behrman, giving the amount of pavement laid during the years of his administration:

Hon. Martin Behrman:

Dear Sir: Believing that you would like to know what the records of this department show, I have had the following tabulation of street pavements made, according to which you will observe that in the six years that you have been mayor, 274,368 more square yards of such pavements were laid than in the entire history of the city of New Orleans up to and before the time you became mayor.

Kind of Pavement.	Previous to Jan. 1, 1905. Sq. Yd.	Since Jan. 1, 1905. Sq. Yd.
Asphalt	576,475	625,582
Vitrified brick	138,300	10,201
Small granite	10,166	30,919
Bitulithic	.....	155,663
Granitoid	.....	138,808
Mineral rubber	.....	38,136
Total	724,941	999,309

W. J. HARDEE, City Engineer.

SEWERAGE AND SANITATION

Decisions in the Bronx Sewer Cases

White Plains—Supreme Court Justice Mills has handed down two decisions affecting the appraisal of damages of land taken for the Bronx Valley sewer, within the borders of the City of Yonkers. In the case of the land of William E. Haupfauf, which runs south on Bronx River road from Yonkers avenue, the justice sends the matter back to the commission for re-appraisal and rehearing. The plot was considered as one parcel, and $16,718 was awarded to the owner. The latter claim that it should have been considered in plots and lots, as laid out, containing 58 separate parcels and the court upholds him in his contention. Parcel 73-A ran through the center of Bronx place, a private thoroughfare when the proceedings were started, but later it was deeded to and was accepted by the city, making it a public thoroughfare. The owners of the abutting property claimed damages through an alleged ownership to the center of the street in front of their lands. Deeds of original ownership in the street rather complicated matters. The present proceeding was to set aside the order confirming the report and to have the commissioners appraise the damage to their property. Justice Mills decides that there was a technical wrong committed when the commissioners failed to notify the abutting property owners of the intention to file the report and to make the motion to confirm the report, and for that reason he would vacate the order confirming the report. In any event, the justice says, the owners would be entitled only to nominal damages, and on that account it would be useless to send it back to the commissioners for correction in that respect. Therefore he vacated the other order, and confirmed the report as of the present date, the owners having now received notice.

Civic Club Plans War on House Fly

Philadelphia, Pa.—Prof. F. D. Weidman, assistant professor of pathology at the University of Pennsylvania, delivered a lecture before the Civil Club last week on the disease-breeding house-fly. The Public Health Committee of the Civil Club has arranged to have the lecture given in some 30 different places in and about Philadelphia.

New Pumps Installed at Sewage Plant

Providence, R. I.—The sewage pumping plant is completed except for some minor touches, the installation of the last of the centrifugal pumps being finished last week. The plant is now ready for any emergency. The work of changing over the old system to the new centrifugal pumps was accomplished in the face of much difficulty, as it was possible to discontinue but one of the old pumps at a time in effecting the change, the others being required for service in taking care of the sewage of the city. They were so worn that it required extraordinary work to cope with the volume that came down the big trunk sewers in time of storm and at times exceeded their capacity and flooded the plant. With the installation of the first series of the six centrifugal pumps, however, the demand on the old pumps was not so severe, as the new system proved itself beyond its rated capacity and amply able to handle the large volume of sewerage easily. Thus, when the work on the second installation was begun, the first centrifugal and the third old pump were able to care for the sewage. The third centrifugal was installed and placed in operation last week, the rope drive being completed and tested successfully. The rebuilt plant now comprises the three engines which were retained from the old system, each of which drives two new centrifugal pumps. As for the efficiency of the new plant, the City Engineer, Otis F. Clapp, states that about 10 days ago during the severe storm, two of the engines were set at work for an hour and had no difficulty in handling the rush of water through the storm sewers, attaining in that time the notable rate of 87,000,000 gallons per day.

WATER SUPPLY

Davenport Plans to Buy Water Works

Davenport, Ia.—One of the preliminary steps in the negotiation for the proposed sale of the Davenport Water Company plant was taken when F. E. Tearneuere, dean of the engineering college of the University of Wisconsin, arrived to make appraisement of the value of the plant.

Filtration Plant to Be Installed

Ogdensburg, N. Y.—Following the inspection of the Albany filtration plant by George E. Van Kennan and other officials of Ogdensburg, Common Council has awarded contracts aggregating $175,000 for the installation of a system of slow sand filtration. Besides supplying the city with water the new plant will pump 500,000 gallons of water daily for the St. Lawrence State Hospital.

Muskegon in Grip of Water Famine

Muskegon, Mich.—A water famine has assumed alarming proportions in Muskegon. The intake pipe leading into the lake is clogged with sand and it is possible to get scarcely any water in the mains, and in the lower levels of the city there is a pressure of only six pounds. On the high lands and in outlying parts of the city there is none at all. The normal pressure maintained is 40 pounds, the fire pressure being much higher. The city has borrowed another engine for an emergency and an effort will be made to obtain another one. Engineers say it will be impossible to clean out the mouth of the intake pipe until Lake Michigan is calm. The lake is rarely in this condition at this time of the year and there is no prospect of relief. It is feared that insurance companies will declare thousands of dollars worth of policies void if something is not done. The authorities are afraid to turn water from Muskegon Lake into the mains because of the impurity of the lake water, but this will be done in case a serious fire breaks out.

New Filtration Plant Near Completion

Norwich, Conn.—Last week the filters arrived here from Darby, Pa., where they are manufactured by the Roberts Filter Company. Arrangements have been made by the company with a local truckman to cart them to the pumping station, where they will be set up as soon as possible. Each filter is 8x20 feet and will be filled with the material required in filtration after they are in place. The foundations are ready and the filters ready to be moved as soon as the workmen are ready for them. Their arrival was as early as they had been expected, having been nine days on the way. The company has full charge of them until they are set up and ready for use, which will take from one to two weeks.

May Abandon Reservoir Because of Crawfish

Frederick, Md.—The presence of crawfish in the Frederick reservoir will probably cost the city $22,000 to repair leaks made by their boring, and the abandonment of the reservoir may follow. The great leakage of water from the reservoir has been assigned to the presence of crawfish by engineers, and it is thought that about 100,000 gallons of water are daily going to waste.

Work to Be Resumed on Lake Altoona

Altoona, Pa.—R. J. Carothers, head of the Carothers Contracting Company, which is constructing Lake Altoona, has arrived at the scene of operations, and work will be started as soon as the weather permits. Mr. Carothers will give the work his personal attention during the ensuing summer and every effort will be made to complete the contract before fall. The present contract chiefly involves the core wall and the embankment. The reservoir will not be completed by the contract with the Carothers Company, but it will be so far completed that it can be put in service, and half a billion gallons of water can be stored in it. This it is expected will place the city beyond danger of water famine after this year, and the officials of the water department do not anticipate the trouble this year the city experienced during 1909 and 1910, as there has been a much larger precipitation throughout the winter and the flow of the streams is unusually heavy. Both reservoirs are constantly overflowing from four to six inches.

City Endeavors to Buy Water Plant

Covington, Ky.—At a meeting of the Covington Board of Water Works Commissioners last week the directors of the Kenton Water Company reported that the offer of $26,331.45 made to them by Council for their entire plant, which is now supplying water to former Latonia, was not enough, and they ask $36,673. The offer was made by the city after experts had reported that the plant as it stands was worth that amount. It is not believed that Council will increase their offer, but will order the commissioners to proceed to lay water mains in Latonia.

Meter at Filtration Plant.

Providence, R. I.—The City Engineer's department will install an eight-inch Venturi meter in the main pipe leading from the Pettaconsett pumping station to the filter beds, for the purpose of measuring the amount of water sent through the filters daily. Up to the present time the city has estimated the amount, but it is now believed desirable to keep an accurate series of figures. Two small meters will also be installed at the pumping plant, one in the laboratory and the other in the screen chamber of the engine room. In this way an accurate measurement of the water for all purposes can be secured and filed for compilation in the reports of the department.

STREET LIGHTING AND POWER

Lighting Experts Examine Property

Los Angeles, Cal.—Work preliminary to fixing the lighting rates to be charged by the different electrical corporations has been begun in earnest by the experts engaged by the Board of Public Utilities, who are at present going over the plant of the Southern California Edison Company. The board is going into the rate-fixing question in a thorough manner, and instead of accepting the figures of the corporations will be furnished with first-hand information gathered by its own engineers.

Gas Company Asks City's Help in Adjusting Differences

Spokane, Wash.—Asking the City to take a hand in adjusting the differences between the company and its gas consumers, the Spokane Falls Gaslight Company has recommended to the city commissioners that a complete meter proving apparatus be installed at the city hall. To make this apparatus the last "resort" of consumers who kick to the company that their meters register more gas than they use, is the plan of the company.

Cuts City's Light Price

Cincinnati, Ohio—Cincinnati will be given its electric lighting contract by the Union Gas & Electric Co. several dollars per lamp per year cheaper than the price in Cleveland. The bid, which has just been opened, states that the company will give the city its lighting in the "overhead" district for $50 per lamp per year and in the "underground" district for $55 a year. Cleveland pays $53.75 for its "overhead" lighting. No figures are obtainable here as to the "underground" cost. The taxpayers of Cincinnati will save $66,000 a year for each of the ten years this contract is to run, or $660,000 in all.

For Municipal Gas

Portland, Me.—The socialists of this city are agitating for municipal ownership of the gas works and will make it a part of their educational campaign until the next municipal election and one of their local issues.

Accident to Light and Power in City Hall

Chicago, Ill.—The new City Hall had its first dark experience last week. For half an hour before 10 a. m. the building was in gloom, the elevators were stuck between floors and the main corridor filled with excited persons who groped about in the dim light furnished by two gasoline lamps. All the trouble was caused by the burning out of the main feed cable of the Commonwealth Edison Company leading into the building. This furnished the electric power for lighting the building and running the elevators. It was repaired in comparatively quick time, a large force of electricians being put at the work, but for a time it was feared that the cable was broken and that the damage could not be fixed up during the day.

FIRE AND POLICE

Will Pay Fire Department

Anderson, S. C.—City Council adopted an ordinance looking to the reorganization of the fire department. The old system of a volunteer department was abolished. W. L. Jackson, fire driver, was elected chief to give his full time to his duties. The department will consist of 18 men, exclusive of the chief and the three drivers. These men will be paid stated annual salaries, which will be supplemented by extra pay for each fire call. The 18 men will not give all of their time to the department but will answer the fire calls from their respective jobs. The effect of the ordinance is that Council will take over and completely control the fire department.

Fire House with Police Station as Annex

Hamilton, O.—The illustration shows the new Lindenwald hose house and is duplicated in the East Hamilton house, both nearly finished. Each house will be equipped with a hose wagon, two horses and four men. The houses will be the best equipped in the department and will carry 1700 feet of hose with chemical extinguishers, ladders, etc. There will be hose racks in the basement for drying. The

Courtesy Hamilton News.

NEW FIRE STATION, HAMILTON, O.

ground floor will be cemented and will be occupied by horses and apparatus. There is space for a new truck in each, to be purchased later, possibly an auto truck. There will also be an office, toilet rooms, lockers and a place of detention for police prisoners. This will contain two steel cells. On the second floor is the dormitory, lounging room, baths, etc. The houses cost with land $40,000 each. Safety Director A. W. Marged will select men for the new houses.

Auto Ambulance Placed in Commission

Dayton, Ohio—With the delivery last week of the new ambulance to city officials the emergency equipment of the police department was brought up to the efficiency of any city in the country of its size, and surpassing many larger. The receiving party was composed of Mayor Burkhart, Director of Safety Lienesch and Chief Allaback. The ambulance was taken to headquarters and officially turned over to the city. A test ride was taken over the hills south of the city, and perfect satisfaction was the verdict. The machine is equipped with the most modern devices, including electric light, hot and cold water, and emergency electric lamps to be used at accidents where no other lights are available. The cost of the ambulance was $4,050.

City Makes Splendid Fire Record

Topeka, Kan.—The fire loss in the city of Topeka for the last 20 years, ending December 31, 1910, amounts to $1,429,002. The value of the property under risk in these fires has been placed at $16,636,162. The insurance involved reaches near the ten-million mark. In these 20 years 3,495 fire alarms were turned in to the stations in Topeka.

Buy Police Dogs

Houston, Tex.—Chief Ray of the Houston Police Department has purchased eleven trained dogs, which will be kept at the police station. The main purpose of the dogs is to trail the burglars that have been operating frequently in this city, providing their work is not stopped. A try-out in three runs proved the efficiency of the dogs.

Entire Fire Department Resigns

Bloomington, Ind.—The resignations of all the members of the city fire department were accepted last week at an adjourned meeting of the City Council and the organization of a new department started. William Shinn, an ex-policeman and former fireman, is to take Chief Frank Todd's place and Perwic Deckard is to replace Assistant Chief James Durnall. The present fire department tendered their resignation when the Council refused to increase their pay.

Trial of Fire Apparatus Satisfactory

Lansing, Mich.—A new motor fire engine has stood several preliminary tests and has been accepted by the city.

GOVERNMENT AND FINANCE

Tarrytown Election Carried by Women

Tarrytown, N. Y.—Tarrytown will have $70,000 to enlarge its water supply and lay new mains for fire protection, and Washington Engine Company will have a new $5,550 auto combination fire apparatus, thanks to the women voters. Never before in the history of the village have women taken such an active part in a campaign. They were only enlisted in the fight six days. On March 15 the Women's Civic League held a meeting at which they asked D. S. Merritt, engineer for the Water Board, to deliver an address on Tarrytown's water supply and its needs. Mr. Merritt told of the need of a better water supply so well that after he finished the women crowded around him and pledged their support for his plans. The next day women were being buttonholed on the street by enthusiastic workers. Nearly every woman in Tarrytown was visited, and a notice was published calling on the women to get out on election day and do their duty. They heeded the call enthusiastically and out of a total of 309 votes, the women cast more than a third of them.

Bill Will Protect City Bond Buyers

Lebanon, Pa.—To doubly validate the $110,000 worth of bonds issued by the City of Lebanon to pay for sewer improvements, Representative Wm. C. Freeman, of Cornwall, last week introduced in the House at Harrisburg a bill making them absolutely legal. There is no doubt whatever of the passage of the bill. This precaution—which, by the way, was taken at the instance of none of the three banking institutions in this city which bought blocks of the bonds—makes assurance doubly sure that the bonds are good. It makes the legality of the bonds absolutely sure, double riveted and ironclad. The bill was introduced at the instance of private buyers of the bonds, it was stated.

Draw Lots for Office

Newburg, N. Y.—After a bitter contest in Highland Falls for Village President between George W. Flood and J. S. Likely, a tie vote resulted. To avoid the expense of another election the two candidates agreed to draw lots for the office. Slips of paper were put in a hat and Flood drew the winning ticket.

City Wins Franchise Suit

Denison, Tex.—In the case of the City of Denison vs. The Postal Telegraph and Cable Company of Texas, wherein the City of Denison sued for a franchise tax for the year 1910, Justice of the Peace I. N. Layne last week rendered a decision in favor of the City of Denison. This is one of the four suits which were filed several weeks ago by City Attorney N. H. L. Decker for the collection of the franchise tax of $74.28, penalties, interest and fees and cost of suit. D. A. Frank of the Postal Telegraph Company legal department represented the company, and Mr. Decker the City of Denison. The evidence in the case was heard Saturday and Justice Layne rendered his decision Monday afternoon.

STREET CLEANING AND REFUSE DISPOSAL

New Flushing Machine

Schenectady, N. Y.—The new street flushing machine for the city has arrived. It is of iron, with a capacity of 653 gallons, three more than called for in the specifications. As soon as the weather permits it will be put to work, together with the old one, flushing the streets. The new street sprinkler has not yet arrived, but the old ones are in commission, and with the rotary broom wagons received their new numbers from the hand of a painter in the city hall lot.

Garbage Crematory Closed

Waterbury, Conn.—H. M. Rigney's contract with the city for the disposal of the garbage at the crematory on Sheffield street has expired. Consequently there will be no more garbage disposed of in Waterville. The garbage will be disposed of by Hans Rasmussen and sub-contractors for the next year. Mr. Rigney, who has been a resident of Waterville for many years, has had the contract for over twenty years. Those employed at the crematory by Mr. Rigney have been thrown out of employment by the shifting of the contract.

Flushing Machine for City Arrives

Poughkeepsie, N. Y.—The clean streets of Poughkeepsie will be cleaner still and that state next to godliness will be secured with a deal less effort than has been expended before this time. A new flushing machine, weighing 4,000 pounds, which is said to fairly eat up the dirt, arrived in Poughkeepsie last week. It is white, with "Department of Public Works" in black, red-lined letters. The machine has been taken on trial and will not be finally accepted until its worth has been proved. A demonstration will be given by men from the Tiffin Wagon Company, of Tiffin, Ohio.

Cheaper Flushing Asked for Streets

Spokane, Wash.—Commissioner of Public Works Coates states that he will ask the commissioners to send him to Seattle to investigate a new system of street flushing. The system, if adopted, will supplant the present pressure flushing wagons used downtown and on paved streets elsewhere in the city. If found efficient, it will save considererable expense. The system is to flush the streets from the hydrants instead of from the carts, using length of 2-inch steel pipe mounted at each end on 4-inch swiveled wheels, the lengths of pipe to be connected together by pieces of heavy, steel-ribbed fire hose. Mr. Coates says two men can flush a block with this outfit in 10 minutes at much less cost than under the present system. A horse is used to drag the outfit from block to block.

Must Carry Refuse Far Out Into Ocean

Sacramento, Cal.—Harland's bill prohibiting the deposition of garbage and refuse in navigable waters was passed by the Senate and goes to the Governor. Senator Martinelli said that the object of the bill was to relieve residents of Marin county from the nuisance caused by the dumping off the Heads of all sorts of trash, rubbish and offensive matter. The bill provides that the scows and other craft carrying garbage out on the Pacific Ocean must go not less than twenty miles off shore before unloading. Inspectors appointed by the State Board of Health or the municipality at the point of departure must go along to see that this is done.

Garbage Plant Ready for Opening

Bridgeport, Conn.—Delay in the arrival of machinery for the garbage plant is responsible for its not being able to open for receiving the city garbage until April 15. Commissioner Frank Bogart of the Health Board was informed by Contractor C. C. Fischer that he expected the plant will be ready at that time. It is expected that the contractor will have a model plant when everything is ready for the opening and no expense is being spared. His contract which calls for payment of $1 per ton for the reduction process is considered to be an excellent one for the contractor and, provided he can keep his contract by having an odorless plant, it is expected that he will be able to make his venture a profitable one.

Plan for Cleaner Streets

Elizabeth, N. J.—The problem of keeping clean the ninety-seven miles of paved and unpaved streets in Elizabeth is the puzzle facing the Committee on Streets and Highways of City Council. The Committee, composed of Councilman McGurn, chairman, and Councilmen Marsh and Wagner, has been giving the subject the utmost consideration for weeks and has gone over many plans that have been suggested to the committee, by Mayor Stein and by others. No plan has been adopted as yet, but Chairman McGurn is of the opinion that a satisfactory method will be discovered and that the streets will be kept clean and watered at a minimum cost.

The plan of street cleaning as suggested by Mayor Stein is: That the work be divided into districts, with a competent foreman at the head of each district, said foreman being held accountable for his district work; that the principal business streets be swept at night; that the sprinkling wagons be assigned to each district and be kept busy during the dry season of the year; that the employes be placed in uniform, as are the police and firemen; that a certain sum be set aside annually to be used exclusively for the repair of paved streets, so that minor repairs can be made as soon as their needs are discovered, without causing the general fund for street cleaning to suffer; that the ordinance providing for the removal of snow from sidewalks, and the throwing of paper, etc., into the streets should be more rigidly enforced, and that the necessary appropriation for oiling the streets be made early so that the streets can be oiled in the early summer months as soon as the roads become dusty.

To Investigate City Garbage Methods

Niagara Falls, N. Y.—City Engineer F. S. Parkhurst, Jr., has been authorized by the Board of Public Works to visit cities using sanitary methods for the disposal of garbage and make a report to the Board at the earliest possible date. It is the intention of the city to stop the pollution of the Niagara River by discontinuing the dumping of city refuse into the water. By this means it is believed that the city will be taking the first step in stopping the pollution of the Niagara and that the State Board of Health will then take steps to prevent Buffalo and the Tonawandas from dumping its sewage into the river above the falls. The disposal of garbage by incineration is said to be the best method, and the taxpayers may be called upon in a short time to vote on the purchase of such disposal plant. The cost of a disposal plant sufficient to take care of the city's refuse is estimated at about $75,000.

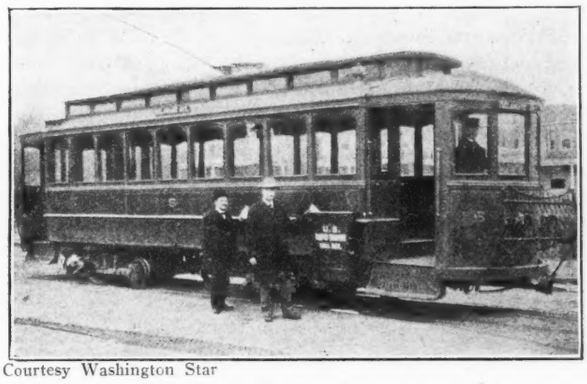
Spring Cleaning a Step in City Beautiful Plan

Toledo, O.—There will be a monster housecleaning on May day for which everybody in Toledo will want to be called early in the morning if the plans of the proposed Civic Federation, already numbering 2,500 members, go into effect as suggested at the meeting of many of the civic bodies of the city at the Business Men's Club last week. It is confidently expected that the federation will embrace 5,000 members when organized. With the idea of the City Beautiful in mind, Colonel J. C. Bonner, acting as chairman of the meeting, spoke of the necessity of rendering the outward and the hygienic aspects of the city attractive to prospective settlers. On May day every storekeeper, housekeeper and manufacturing concern in the city will be asked to put its house in order, and explore garret, cellar, lumber shed and yard for the things which are unnecessarily cumbering the earth. These will be deposited in front of their premises and collected and taken to a scow, which will sail far out upon the lake, where the rubbish will be deposited. The sign of the citizens desirous of perfecting the City Beautiful will be a pile of debris on May the first. It will be a badge of honor on that day. The day set by the federation as that on which the City Beautiful idea should be completed is that of the Perry Centennial celebration in September, 1913. The grocers, the butchers, the bakers and the candlestick makers of Toledo will all be invited to loan their wagons for the removal of the proceeds of the search after forgotten and unsightly things on May day. Among the measures advocated for the promotion of the City Beautiful will be the paving of all streets, the growth of more shade trees and the education of citizens as to the things they ought and ought not to do.

RAPID TRANSIT

Satisfactory System of Street Car Mail Boxes

..Washington, D. C.—If negotiations now pending between the Post Office Department and the street railway companies are successful, letters may be mailed in boxes attached to the sides of the street cars and their outward dispatch greatly facilitated. Various plans have been tried by the department to perfect a system of rapid mail collection. In some cities where postal cars are operated on the street railways letter boxes have been provided on the mail cars and the mail dropped in them has had the immediate attention of the postal clerks. Such a plan was tried in this



Courtesy Washington Star

NEW PLAN OF ATTACHING MAIL BOX TO CAR

city for a while. The new plan, however, is said to be much more effective and satisfactory. It contemplates the attachment to the side of the street car of a mail box with a large funnel-shaped mouth, into which letters may be easily dropped when the car stops at the corners or the motorman slackens speed as it passes. The box is so constructed that neither snow nor rain can damage the letters deposited in it, and yet its mouth is always wide open. Provision is also made whereby letters gathered on lines that do not connect with the postoffice may be transferred at junction points with other lines and without delaying the rapid transit of the cars or interfering with their schedule. The plan is said to have been tried in Wilmington, Del., for some months and to have been so successful and satisfactory in every respect that the Mayor and Common Council joined the postmaster in extolling it to the department and asking for its continuance.

Improvements to Street Cars

Louisville, Ky.—Street cars on Louisville city lines may be timed hereafter by clocks instead of inspectors. Three of these clocks are already in use and President Minary states that they have proven so uniformly satisfactory that they will be used on the entire system in a short time. Clocks now in use are located at Fourth avenue and Oak street and at Second street and Broadway. The clocks have connections with the trolley wire by a small electric wire and when the car on any line reaches a given point the trolley wheel coming in contact with the small wire puts into action an electric current that causes a needle to register on the face of the clock the exact second the car passed that point. It is stated that it will be only about ten days before motormen on every car line in the city will be equipped with stools. They have already been installed on the Second street line. This innovation is introduced on the suggestion of Mayor W. O. Head. The company has found some difficulty in finding stools small enough to keep from obstructing the small spaces in the front vestibules.

Fender Ordinance Goes into Effect

South Bend, Ind.—Safety appliances, similar to those in use in the large cities, have been placed on city cars of the Northern Indiana Railway in South Bend, and will serve as a protection against fatal accidents. An ordinance passed by the Common Council providing for the equipment of cars with proper safety appliances became effective last week.

To Limit Street Car Loads

St. Paul, Minn.—Without a dissenting vote the Aldermanic Committee on Streets last week recommended Alderman Corning's "strap-hanger" ordinance for passage. The ordinance provided the maximum carrying capacity of any car shall be the number of passengers the car may seat, plus one-half that number, who will be permitted to stand. When the maximum carrying capacity has been reached there must be displayed in a conspicuous place at the rear of the car the sign "Filled," and no more passengers may be permitted on the car until other passengers leave the car. A penal clause is attached. It is further provided the company must furnish enough cars so no patron will be required to wait more than three minutes for a car on the lines of heaviest traffic and not more than ten minutes for a car on all other lines in the city. A penalty attaches to violation of this provision. It is likely, however, this provision will be amended, making the waiting time uniform.

Improvements Must Be Made in Street Car System

Seattle, Wash.—The radical actions of the newly elected reform City Councilmen have caused a sensation here. The Council has gone on record to investigate immediately how many miles of tracks the Seattle Electric Company is operating over without franchise, and if such are asked for and now granted they must be paid for. The Council will put an end to strap-hanging by making new schedules and forcing the purchase of new equipment. Its most radical action was the setting of the date of April 25, when the Seattle Electric Company must show cause why its Ranier avenue franchise, a line that will tap the populous Ranier Valley, should not be repealed. The voters at the same election in which they elected the reform candidates having voted a bond issue of $800,000 to build a line along Ranier avenue, leads shrewd financiers to believe the franchise will be repealed.

MISCELLANEOUS

Voters Reject Library

Wellsville, N. Y.—By a majority of 74 votes, at the village election, last week, the town of Wellsville, N. Y., voted down the proposition to accept the "David A. Howe Public Library." It is understood that the vote was the result of a misunderstanding, the people believing that conditions were attached to the gift.

Dog Ordinance Passed by City Council

Jacksonville, Fla.—As the result of several cases of hydrophobia in the city a bill has been passed stipulating that every person owning a dog must register the animal with the City Recorder and shall be subjected to a tax of $1 for each dog. The bill also provides that metal tags shall be attached to a collar, denoting the number of the license. Owners allowing their dogs to run at large are required to have them muzzled and when a dog accompanies a person on the streets of the city he must either be muzzled or must be led by a chain or leash. The appointment of dog catchers to impound animals not muzzled or failing to comply with provisions of the ordinance is vested in and the period of their service is discretionary with the Mayor. The ordinance further stipulates that all dogs taken up shall be held for five days. Owners of dogs which are tagged shall be notified of their being impounded and every opportunity given them to claim the animals. After being held five days unclaimed dogs will be killed.

Trimming of Trees Ordered in Garwood

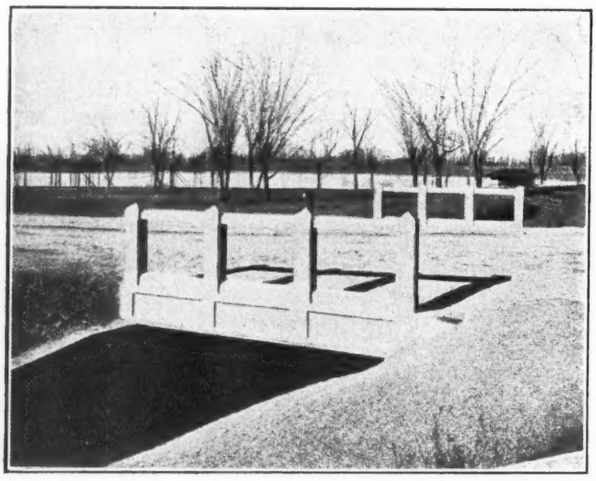
Garwood, N. J.—Councilmen J. L. Hildner, H. M. Bull and H. M. Wyckoff, constituting the street committee of the council, have sent out notices to all property owners to trim trees in compliance with the borough ordinance. The notice informs property owners that the committee takes the opportunity of notifying each owner to trim trees so that the same will not interfere with the free passage of pedestrians or the obstruction of electric lights in accordance with Section 7 of ordinance No. 1. The committee gives the owners ten days' time to comply with the terms of the ordinance.

Plans Launched to Free Bridges

Columbus, S. C.—Plans for "freeing" the bridges across the Congaree and Broad Rivers were discussed at the organization meeting of the commission named by Governor Blease to have charge of the work. The members of the commission were commissioned following a report to Governor Blease by the election commissioners that the election held in Columbia township for the issue of $75,000 in bonds, was provided for by an act passed in 1908. At the meeting it was decided to confer with the owners of the present bridges across the Congaree and Broad Rivers. The bridges will be bought if a reasonable price is fixed. Before making a purchase an expert will examine the bridges for the commission to determine the safety of the structures.

Concrete Bridges in Denver Parks

Denver, Col.—The Park Board is completing the construction of four concrete bridges, spanning the City Ditch which borders the Marion street driveway through Washington Park. The work is being done under the supervision of Frederick C. Steinhauer, superintendent of parks. The bridges are of ornamental design and will add considerably to the beauty of the park.



SHORT SPAN CONCRETE PARK BRIDGE

Municipal Ownership Makes Good Showing

Calgary, Alberta—The City of Calgary, Alberta, owns and operates the street railway, water works and electric light plants, which are operated by a commission of three. During the five years that the electric plant has been under municipal control the rates have been reduced 45 per cent. The street railway has been operating about eighteen months, and contracts have been let for 22 miles of new track this year. The water works plant was purchased from a private company several years ago in a very dilapidated condition, since when it has been largely reconstructed; 19½ miles of mains having been laid in 1910. This plant has cost about $1,400,000. The electric plant has cost about $500,000, and the street railway about $530,000. During 1910 the net surplus was $3,335 for the water works, $22,407 for the lighting and power plant, and $33,315 for the street railway. In figuring these profits allowance was made for interest, sinking fund and depreciation, except that apparently no depreciation is charged off for the water works. The interest rates are from 3 to 4½ per cent., and the sinking fund about 1.6 per cent. for the water works and 1.8 per cent. for the other two.

City After Record for Improvements

Richmond, Ind.—The city is going after a record this year for public improvements in contrast to last year's inactivity. So far this year, according to Everett Davis, Chief Clerk of the Engineering Department, contracts for $83,000 of public improvements have been let. Mr. Davis says there is about $30,000 worth of contracts for improvements to be let.

City Planners Organize to Beautify City

St. Paul, Minn.—St. Paul's city planners believe the public will support their projects for civic improvements, and the City Club last week launched a campaign for the organization of a gigantic "civic trust," the object of which will be to obtain the consummation of the projects now planned. Every civic organization in St. Paul will be invited to become a member of the City Club. Such membership will entitle the organization to five delegates, president, secretary and three other members in the club's civic council. The civic council will be an executive committee of the "civic trust," which will comprise the total membership of all civic organizations when it comes to creating sentiment for civic improvements. This is a most important step as it assures uniformity of plans.

Law Prohibiting Sidewalk Obstructions Will Be Enforced

Port Arthur, Tex.—Removal of board signs and merchandise displayed on the sidewalks will be strictly insisted upon, and those who fail to take heed and obey the edict will be prosecuted. The city authorities have determined to strictly enforce the law prohibiting the placing of these board signs on the sidewalks, likewise the obstruction of the walks in other ways. Chief of Police Taylor, acting under instructions of the Mayor and Council, is making a canvass of the town and notifying the merchants and others of this fact, giving them due warning that unless the law is obeyed arrests will follow.

Dynamiting Municipal Building Does Little Damage

Springfield, Mass.—An attempt to blow up the tower of the new municipal group of buildings with dynamite resulted in slight damage. The contractor said when asked that 100 bricks and a few hours' work would put it in as good shape as ever. Five hundred dollars reward is offered by the city for the arrest and conviction of the persons responsible for the explosion.

Will Plant 60,000 Trees

Washington, D. C.—The school children of Washington will contribute their efforts toward making Washington a "City Beautiful" on Arbor Day by planting about 50,000 catalpa trees. These trees are to be given to the public and private school pupils by Woodward & Lothrop, the only stipulation being that the planter must take care of the tree. Not only will 50,000 be distributed in Washington, but about 10,000 more will be distributed in the vicinity. The catalpa, or "Indian cigar," reaches maturity within a few years, and because of its rapid growth and very durable wood, which has been described as being "lighter than pine, stronger than oak, and tougher than hickory," is recommended by the United States forest service for general planting. Besides its rapid growth, the catalpa is valuable for city use because it is a flowering tree, bearing beautiful white blossoms, spotted and lined with brown and purple.

Money Is Divided Among City Parks

Richmond, Va.—After two hours of cutting and pruning a subcommittee of the Council Committee on Grounds and Buildings last week distributed between the various parks of the city the general appropriation of $25,000. The report will be made to the Grounds and Buildings Committee next week. The slate as adopted is as follows: Chimborazo Park, $2,950; Marshall Park, $2,000; Jefferson Park, $1,000; Taylor's Hill, $1,000; Steps, Twenty-sixth street, $20; Gamble's Hill, $900; Monroe Park, $1,200; Nursery, $1,200; Riverside, $1,000; William Byrd, $8,900; Monument avenue, $900; Washington square, $700; Contingent fund, $100; Water and Light, $700; Joseph Bryan Park, $2,400. These funds are for improvements, and are aside from the pay of keepers and laborers.

Only Bonded Persons May Do Pipe Fitting

Spokane, Wash.—An ordinance prohibiting any plumbing and gas fitting in the city except by persons and firms filing a $5,000 surety bond was one of the last passed by the old City Council. It was framed by the master plumbers of the city and passed, according to Plumbing Inspector E. Riley, without his recommendation and even without his having time to go over it. Permits will be required for all work except removal of stoppages or repairing leaks and a few other minor jobs of repairing.

LEGAL NEWS

A Summary and Notes of Recent Decisions—Rulings of Interest to Municipalities

Patented Paving Materials—Statutes

Tousey v. City of Indianapolis et al.—Burns' Ann. St. 1908, relating to towns and cities, provides that a board of public works shall let a contract to the lowest and best bidder; section 8710 relates to the determination by voters or by the Council of the kind of material to be used in a street improvement. A corporation having patent rights in a paving material called bitulithic proposed to grant to the city, or to any accepted bidder for paving work, the right to use it for a specified royalty, conceded to be reasonable, the city to have the use of such right for repair of pavements for which the contracts were let during 1908. The city accepted the proposition and after a petition under section 8710, requiring the use of bitulithic, prepared specifications calling for bitulithic paving, specifying that the rights conferred by the company were granted to any contractor at the same rate. Held, in an action by a taxpayer to enjoin the letting of the contract, that the use of the patent rights provided in the specification was not an interference with the competition contemplated by the statute. —Supreme Court of Indiana, 94 N. E. R., 225.

Improvements—Description—Sufficiency

City of Hillsboro v. Grassel.—Where blue prints of the plans of a local improvement were before the Council, and considered as part of the ordinance at the time of its passage, temporary detachment from the ordinance did not invalidate the ordinance. Under Local Improvement Act, requiring an ordinance for a local improvement to describe the improvement, etc., plans, profiles and specifications attached to the ordinance made a part thereof by reference are as much part of the ordinance as if bodily incorporated therein.—Supreme Court of Illinois, 94 N. E. R., 48.

Park Commissioners—Power to Make Improvements

South Park Commissioners v. Pearce et al.—Under Hurd's Revised Statutes, 1909, authorizing park commissioners to improve streets under their control by special assessment, an improvement is not precluded merely because the street has been improved by the city, but good pavement, sidewalks, curbs and gutters recently put down at the abutter's expense cannot be replaced at the abutter's expense, with substantially similar improvements, slightly changing the details to better adapt the street as a pleasure driveway.—Supreme Court of Illinois. 94 N. E. R., 33.

Public Officers—Compensation

Amerige v. Town of Saugus.—There is no such relation between a public officer and a municipality in and for which he is elected or appointed as to entitle him, merely by reason thereof, to compensation.—Supreme Judicial Court of Massachusetts, 95 N. E. R., 297.

Highway Construction—Landslide Damages

Giaconi v. City of Astoria.—In an action against a municipality for damages to land caused by a slide of earth in opening a road where defendant had the services of a competent engineer, and, in running the cross-section lines to determine the amount of cut and fill, he examined the ground where the improvement was to be made, and prepared specifications based thereon, and no slide had ever been known in that vicinity, and he was never informed of the existence of a fissure therein, his judgment respecting the plan was all that reasonably could have been required from an inspection of the conditions, and the city was not liable.—Supreme Court of Oregon, 113 P. R., 855.

Defective Sidewalk—Negligence

Preiss vs. City of New York.—In an action to recover for injuries sustained by one who stumbled over the end of an iron pipe projecting about 2½ inches above a cement sidewalk it is a question for the jury whether the accident was reasonably to be apprehended.—New York Supreme Court, New York, 127 N. Y. S., 498.

Commission Government—Statutory Provisions

Walker v. City of Spokane et al.—The city of Spokane, a city of the first class, having the right, under Constitution, to frame its own charter subject to control by general laws, prepared and proposed a charter abolishing the offices of Mayor and the Council and substituting five Commissioners, who were to exercise all municipal powers, both executive and legislative, and to be subject to the order and direction of the people by the initiative, referendum and recall provisions. Held, that the provisions of the proposed charter were "within the realm of local affairs or municipal business," within Laws 1903, providing that charter amendments as to any matter within such realm might be submitted to the voters for adoption as part of the charter.—Supreme Court of Washington, 113 P. R., 775.

Defective Street—Injury—Notice

Anthony v. City of St. Joseph.—Where the notice, required by Rev. St. 1899, to be given to the city in case of injury to a person by a defect in the street, stated that the accident occurred on the 14th of August, when the petition and evidence showed that it happened on the 13th, the variance was fatal.—Kansas City Court of Appeals, Missouri, 133 S. W. R., 371.

Grading Streets—Action on Bond

Kansas City v. Davidson et al.—In an action on the bond of a contractor for grading a city street by owners of two tracts of land for breach of the contractor's agreement to grade lots in consideration of the right to remove dirt from such tracts for filling purposes, there could be no recovery where it does not appear what was the quantum of damages suffered by each plaintiff on account of the breach.—Kansas City Court of Appeals, Missouri, 133 S. W. R., 366.

Defective Streets—Injuries to Children

Townley vs. City of Huntington.—A space within the bounds of a city street, set apart between the sidewalk and the roadway for a grass plot, is a part of the street, for the neglect of the safe condition of which the city may be held liable. A street or sidewalk is not in good repair when one without fault may fall from it into a dangerous hole, or an irresponsible child may venture to an unguarded pitfall within its bounds or immediately at its side. A city owes substantially the same duties to children, properly on the streets, although engaged in play, as it does to travelers on business.—Supreme Court of Appeals of West Virginia, 70 S. E. R., 368.

City Advertising—Incidental Expenses

Mitchell vs. City of St. Paul et al.—The term "current and incidental expenses," as used in St. Paul Charter, 1905, means the usual and reasonably necessary expenses, not otherwise provided for, of carrying into effect the powers and discharging the duties given and imposed by the charter. Advertising the city is not a current and incidental expense, but one which is payable only out of the contingent fund of $10,000 for promoting the welfare of the city.—Supreme Court of Minnesota, 130 N. W. R., 66.

Telephones—Permits—Franchises

East Tennessee Telephone Co. v. Board of Councilmen of City of Frankfort.—A permit to a telephone company to use the streets of a city given by resolution is not a franchise. It is only a license, and may be withdrawn; but, where extensive improvements are made upon the strength of it, it can only be revoked upon reasonable notice to remove the property or to acquire a new franchise.—Court of Appeals of Kentucky, 133 S. W. R., 564.

Defective Sidewalk—New Trial—Diligence

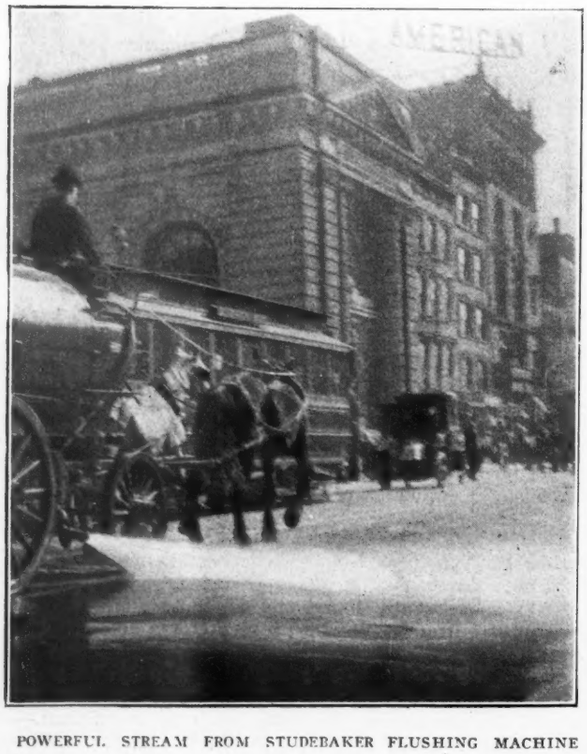
City of Ft. Worth v. Lopp.—Where diligence exercised by attorneys for a city to discover evidence before trial which was subsequently found and urged as a ground for a new trial had been begun and prosecuted but a short time before the trial, which was some six years after the accident, and there was no legal showing as to what effort, if any, former city attorneys and other city officers had made to secure the testimony, the diligence was insufficient.—Court of Civil Appeals of Texas, 134 S. W. R., 824.

MUNICIPAL APPLIANCES

Street Flushers

An exhibition of street cleaning machinery was given in New York City, at Eighth avenue and Forty-second street, March 29, in the presence of Commissioner Edwards of the Department of Street Cleaning and other city officials. Machines made by seven manufacturers were shown, among them being the Emerson street sweeper described in these columns, April 5th issue of the Municipal Journal and Engineer. The street washing machine, perhaps better known as the "squeegee cleaner," made by the Kindling Machinery Company, Milwaukee, Wis., was also there. Street flushing machines, operated by air pressure, created by drawing water from the hydrant into a closed tank until the pressure in the tank is equal to that of the water at the hydrant, were exhibited by the following manufacturers: Sanitary Street Flushing Machine Company, St. Louis, Mo.; St. Louis Flushing Machine Company; D. Connolly Boiler Works, Cleveland, O.; Charles B. Hvass, 509 East Eighteenth street, New York. These machines have been described in the Municipal Journal and Engineer at various times. They all operate on the same general principle and vary from each other in the details of the flushing nozzle, air arrangements and methods of control. Although the water pressure in the hydrants at this point in New York is only 25 pounds, and 40 or 50 pounds is considered as a desirable working pressure, the machines made a favorable impression.

The most novel machine in the exhibit was the new Studebaker Uniform Pressure Street Flusher, made by the Studebaker Corporation, South Bend, Ind. Although a machine of this general description was placed on the market last year by this company, the machine exhibited is practically a new design on account of the substitution of a positive pressure for a centrifugal pump. In this machine the flushing is accomplished by the pump driven by a gasoline engine, there being no pressure in the tank.

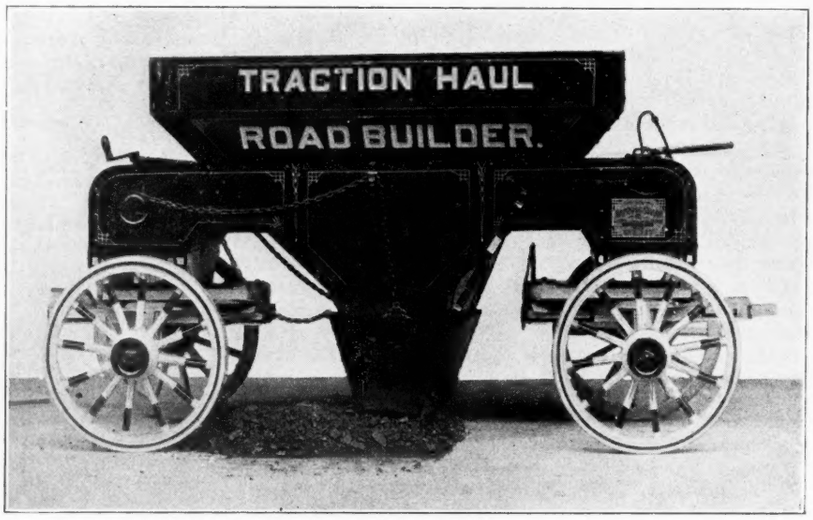


POWERFUL STREAM FROM STUDEBAKER FLUSHING MACHINE

In general outlines the machine can hardly be distinguished from the other flushing machines, except by a view of the rear, which shows the housing for the machinery. The flusher exhibited was handsomely painted in green with ornamental stripes and lettering. The tank, which is of steel, holds 750 gallons. This is mounted on a substantial running gear with Sarven wheels and Timken roller bearing axles. The weight of the wagon is 4,500 pounds. The wheels are provided with double roller brakes. The roller bearing makes the apparatus, even when filled with some 5,000 pounds of water, easy to draw when once started. The gasoline engine is a Fairbanks-Morse two-cycle engine of 12 horsepower, such as is used for marine purposes. It is recommended for simplicity and economy. There are no valves, the piston acting as a valve as it passes the ports of a tri-pass valve. The system of ignition is theAtwater-Kent, recommended for reliability and economy. The pump is a positive pressure pump, the pressure being created by two impellers, which operate together without friction. The flushing nozzle is a Studebaker patent fan-shaped nozzle. It is adjustable in any direction by means of clamp rings and elbows working in combination.

The engine and valve leading to the nozzle is under the control of the driver by means of levers situated by his side. The engine at 725 revolutions creates a pressure of 45 pounds and it can be run at a speed of 900. The valve leading to the nozzle is also controlled by the driver by means of a lever. There is a by-pass from the pump to the wagon so that if the water should be shut off from the nozzle without stopping the engine the overflow goes back into the tank. The engine runs on the throttle, as the engineers say, so that the pressure can be varied from 5 to 40 pounds.

One tank of water will clean about 1,200 square yards of pavement, more or less, according to the condition of the pavement. If only 20 pounds pressure is needed that is all that has to be used. Five gallons of gasoline is sufficient for eight hours' work. The piping can be so arranged that the tank can be filled from a river or other body of water and the expense of using city water thus avoided.



HAYWOOD 3-YARD WAGON WITH SPREADING ATTACHMENT

Three Yard Road Building Wagon with Spreading Attachment

The Haywood Wagon Co., Newark, N. Y., have placed on the market a stone spreading wagon of three yards capacity, which they call a Traction Haul Road Builder. As shown by the illustration the wagon is substantial in construction. Both front and rear wheels turn on fifth wheels so that the wagon may be hauled either way. The construction is intended to be strong enough so that the wagon may be hauled by a traction engine. For this purpose it is made with a traction hitch. The automatic spreading attachment is a steel hopper, the raising and lowering of which is under the control of the driver through levers and chains. A gate at the bottom may be opened as wide as is desirable. The manufacturers claim that the wagon will spread stone or other road material to a depth varying from one inch to two feet and that it will spread its load evenly no matter how rough the road. When the wagon stops the discharge is also stopped. The possibility of saving one or two cents a square yard, the usual cost of hand spreading, makes this proposition an interesting one.

NEWS OF THE SOCIETIES

National Conference on City Planning.—The following program of the third national conference, Philadelphia, May 15-17, has been issued by Flavel Shurtleff, secretary, 19 Congress street, Boston, Mass.:

Monday, May 15—A city planning automobile tour of the city for members of the conference and specially invited guests. His Honor Mayor John E. Reyburn will give a luncheon to members of the conference. First conference session from 3 to 5 p. m. Address of Welcome by Mayor John E. Reyburn. Reply by the chairman of the executive committee, Frederick Law Olmsted. Paper, Municipal Real Estate Policies, Frederic C. Howe, New York City. Discussion. It is hoped that experts from England, France and Germany will present the municipal real estate policy of their respective countries. Second conference session from 8 to 10 p. m., under the direction of the Committee on Public Buildings, Open Spaces and Waterways. Chairman, Frank Miles Day, F. A. I. A., Philadelphia. Papers: The Proper Distribution of Public Buildings, Mr. Ernest Flagg, F. A. I. A., New York City; The Location of Public Buildings in Parks and Other Public Open Spaces, Frank Miles Day, F. A. I. A., Philadelphia.

Tuesday, May 16—Third conference session from 10 to 12 a. m., under the direction of the Committee on Buildings in Relation to Street and Site. Chairman, Lawrence Veiller, Secretary and Director, National Housing Association, New York City. Paper, Buildings in Relation to Street and Site, Lawrence Veiller. Fourth conference session from 2:30 to 4 p. m., under the direction of the Committee on Taxation. Chairman, Hon. Lawson Purdy, LL.D., President Department of Taxes and Assessments, New York City. Paper, Taxes, Assessments and Condemnation, Hon. Lawson Purdy, LL.D. Discussion: Prof. Frank J. Goodnow, Columbia University; Hon. James Alcorn, City Solicitor, Philadelphia; Prof. F. Spencer Baldwin, Boston University; Prof. Charles E. Merriam, University of Chicago. The University of Pennsylvania will give a tea to the members of the conference from 4 to 6 o'clock. Fifth conference session from 8 to 10 p. m., under the direction of the Committee on Traction Lines, Railroads and Docks. Chairman, George E. Hooker, Secretary, Chicago City Club. General topic, The Dock Problem. Papers: Hon. Calvin Tomkins, Dock Commissioner, New York City; Hon. Joseph Hasskarl, Director of Department of Docks and Ferries, Philadelphia; Hon. T. E. Gibbon, President of Dock Commission, Los Angeles, Cal.; George C. Sykes, formerly Secretary Chicago Harbor Commission.

Wednesday, May 17—Sixth conference session from 10 to 12 a. m., under the direction of the Committee on Street Planning. Chairman, Nelson P. Lewis, Chief Engineer, Board of Estimate and Apportionment, New York City. General topic, Street Widths and Their Subdivision. Papers; Charles Mulford Robinson, Civic Adviser, Rochester, N. Y.; John Nolen, Fellow American Society Landscape Architects, Cambridge, Mass.. Discussion: The Street Surface, George W. Tillson, Chief Engineer, Bureau of Highways, Borough of Manhattan, New York; The Subsurface, George S. Webster, Chief Engineer, Philadelphia. Seventh conference session from 3:30 to 5 p. m., under the direction of the Committee on Legal and Administrative Methods. Chairman, Andrew Wright Crawford, Esq., Assistant City Solicitor, Philadelphia. Paper: The Principles of a Uniform City Planning Code, A. W. Crawford. At 8 o'clock the City Club of Philadelphia will give a subscription dinner, at which the members of the conference will be guests.

National Civic Federation.—At a meeting of the Public Welfare Committee, New York, April 7, to discuss the Triangle Waist Company Fire, Fire Chief Croker was invited to speak. After describing the hazardous conditions existing in the building, he continued in part as follows:

I should recommend outside fire escapes for all buildings, fireproof or not. I would have standpipes with outlets at every floor and buckets for water and fire drills—weekly fire drills. In addition, there ought to be, whenever possible, outside fire escapes—tower escapes, enclosed in masonry. They are the only means for getting out of a fire.

The trouble is, as the law stands, responsibility is all divided up between three or four departments and bureaus—the factory inspectors, the Labor Bureau, the tenement house inspectors, the Building Department and I don't know what all. Responsibility ought to be invested in one department, say the Fire Department, and that department ought to have the legal authority to make good. I think it would make good.

This department ought to have authority to inspect factories, and if it found them unsafe to serve a written notice on the occupants (not the owners of the building). After a reasonable time, if the notice remained unheeded, the factory should be closed and a notice left on the door to the effect that it had been closed because the people refused to make the place safe to work in. And it ought to be kept closed.

National Highway.—The National Highways Club, New York and Washington, has been organized to promote the construction of a highway of special design between New York and Washington. The designing engineer is H. Douglass Layman, president of the National Road and Realty Company, 115 Broadway, New York, and Washington Loan and Trust Building, Washington, D. C. The extreme width of the road, according to the plan, will be 144 feet and will include six separate roadbeds and two sidewalks. Trolley cars, automobiles and horse-drawn vehicles will be given a roadway for each direction traveled. The cost of the highway is figured at $90,000 a mile. The scheme is expected to be self-sustaining, the cost of building and maintaining the road being paid from the increase in real estate values participated in by the company along the route and from the tolls charged for the use of the auto roads, the fares charged on the trolley system and rights granted for privileges of running wires, pipes, etc.

Good Roads Association of Florida.—President J. G. Dampier and Secretary C. L. Bittinger have issued an announcement of the annual meeting, to be held at Tallahasee April 27 and 28. They state that the proceedings of the convention will include addresses and discussions upon the scientific, ethic and economic phases of the subject and its relation to industrial progress and development. Legislation pertaining to State co-operation and supervision, financial ways and means, the use of convicts and other details of the subject will receive practical consideration. State and county officials, Mayors of cities, officers of commercial, agricultural, industrial, transportation, development, civic improvement and all good roads advocates are earnestly requested to be present.

Municipal Art Society of New York.—Mayor Gaynor, who is an honorary director, has sent a letter to the heads of all city departments asking them to co-operate with the society in the coming exhibition, which will be held at the National Arts Club, 119 East Nineteenth street, from April 10 to April 23. They have been asked to send in maps, photographs and such other data as will show what is being done to improve the appearance of the city.

International Association of Fire Engineers.—At a meeting of the directors of the association, Milwaukee, March 29, arrangements were made for holding the annual convention at Racine, Wis., September 19-22. A large exhibit hall has been arranged for. Suitable hotel accommodations can be secured in Milwaukee, which is 24 miles away, as well as at Racine. The sessions of the convention will be held in the Racine City Hall. Eleven topics for discussion were selected and invitations sent out to members who are invited to speak.

Calendar of Meetings

April 10-23.
Municipal Art Society of New York.—Exhibition, National Arts Club, 119 East Nineteenth street, New York City.

April 27-28.
Good Roads Association of Florida.—Annual Meeting, Tallahassee. C. L. Bittinger, Secretary, Ocala, Fla.

May 11.
Massachusetts Highway Association.—Quarterly Meeting in conjunction with the New England Conference on Street Cleaning, Springfield, Mass.

May 15-17.
National Conference on City Planning.—Philadelphia, Pa.—Flavel Shurtleff, Secretary, 19 Congress street, Boston, Mass.

May 18-19.
Ohio Society of Mechanical Steam and Electrical Engineers.—Annual Convention, Youngstown.—F. E. Sanborn, Secretary, Ohio State University, Columbus.

May 23-25.
National Fire Protection Association.—Annual Meeting, New York City.—F. H. Wentworth, Secretary, 87 Milk St., Boston.

May 23-26.
National Good Roads Association.—Fourth National Good Roads Congress, Birmingham, Ala.—J. A. Rountree, Secretary, Birmingham, Ala.

May 25-26.
League of Second and Third Class Cities of New York.—Poughkeepsie, N. Y.

May 29-June 2.
National Electric Light Association.—New York City.—T. C. Martin, Secretary, 31 West 39th St.

June 5-14.
National Probation Officers' Association.—Boston, Mass.—Roger N. Baldwin, Secretary, 903 Security Building, St. Louis, Mo.

June 6-10.
American Water Works Association.—Thirty-first Annual Convention, Powers Hotel, Rochester, N. Y.—John M. Diven, Secretary, 14 George street, Charleston, S. C.

June 7-14.
National Conference of Charities and Correction.—Boston, Mass.—Alexander Johnson, Secretary, Ft. Wayne, Ind.

June 7.
National Association for the Study and Prevention of Tuberculosis.—Denver, Col.—Dr. Livingston Farrand, Executive Secretary, 105 East Twenty-second street, New York City.

June.
New England Conference on Street Cleaning.—Springfield, Mass.—Corresponding Officer, Carol Aronovici, 55 Eddy street, Providence, R. I.

June 11-16.
International Association of Chiefs of Police.—Eighteenth Annual Convention, Rochester, N. Y.—Major Richard Sylvester, Superintendent of Police, Washington, D. C., President.

June 13-18.
New York State Association of Chiefs of Police.—Annual Convention, Rochester, N. Y.

June 13-16.
American Society of Civil Engineers.—Annual Convention, Chattanooga, Tennessee.—Charles Warren Hunt, Secretary, 220 West 57th St., New York.

June 21-22.
National Conference of Poor Law Officials.—Boston, Mass.—Dr. Robert W. Hill, President State Board of Charities, 105 East Twenty-second street, New York City.

August 15-18.
Firemen's Association of the State of New York.—Watertown, N. Y.—A. H. Otto, Secretary.

September 19-22.
International Association of Fire Engineers.—Annual Convention, Racine, Wis.

September 19-22.
American Hospital Association.—New York City. J. N. E. Brown, M.D., Secretary, Toronto General Hospital, Can.

September 24-30.
International Congress on Tuberculosis.—Rome, Italy.—Professor Ascoli, Secretary-General., Via Lucina, Rome, Italy.

September 26-29.
American Society of Municipal Improvements.—Grand Rapids, Mich.—A. Prescott Folwell, Secretary, 239 West Thirty-ninth street, New York City.

PERSONALS

ARGALL, JOHN C., former secretary of the Board of Public Works under Mayor Pratt, was unanimously elected to the position of purchasing agent by the City Commissioners of Spokane, Wash., to succeed John Gifford.

BOUSLOG, JAMES, has been appointed Chief of Police of New Castle, Ind., succeeding Chief Burr, resigned.

CARR, HENRY F., of Lawrence, Mass., has been appointed a member of the Park Commission for a term of five years to succeed Colonel Percy Parker.

LLOYD, CHARLES B., has been appointed by the Governor of Maryland a member of the State Roads Commission.

MCCLUNG, BENJAMIN, Mayor of Newburgh, N. Y., has been appointed counsel to the Forest, Fish and Game Department, to succeed Ellis J. Stanley, who was recently appointed County Attorney for Albany County.

POOLE, C. ARTHUR, has been appointed Assistant City Engineer of Rochester, N. Y., to have charge of the construction of the new $1,000,000 sewage disposal plant to be built by that city.

REYNOLDS, S. V., mayorality candidate on the Citizens' Non-Partisan Ticket, was elected by an overwhelming majority.

STEELE, DR. R. L., has been elected president of the Board of Health of McKeesport, Pa.

TARVER, T. C., Jr., City Engineer of Houston, Texas, has resigned to go with the Houston Land Corporation as consulting engineer.

THOMPSON, THOMAS C., has been elected Mayor of Columbia, S. C.

WILSON, J. STITT, has been elected Mayor of Berkley, Cal. Mr. Wilson, who was formerly a minister, is a Socialist, and was Socialist candidate for Governor last November. This is the first time in the history of California a Socialist has been elected Mayor of a city.

MAYORALTY ELECTIONS

MICHIGAN.

Adrian—F. M. Joslin.
Bay City—R. O. Woodruff.
St. Clair—Frank Moore, Jr.
Lapeer—Dr. F. A. Tinker.
Flint—John A. C. Menton.
Ann Arbor—William Waltz, re-elected.
Pontiac—Robert J. Lounsbury.
Port Huron—Frank Moore.
Owosso—Otto L. Sprague.
Corunna—A. E. Richards.
Sturgis—Homer L. Allard.
Marine City—R. B. Baird.
South Haven—Charles Funk.
Monroe—H. C. Ovis.
Cheboygan—Frank Brackett.
Gladwin—Frank Leonard.
Big Rapids—Harry I. Dreshon.
Bessemer—Dr. Pinkerton.
Charlotte—E. G. David.
Boyne City—W. W. Bailey.
Petoskey—W. L. McManus.
Ludington—Joseph Zeiff.
Coldwater—Charles A. Conover.
Battle Creek—Dr. Thomas Zelinsky.
Allegan—Clarence W. Young.
Tawas City—Callie Johnson.
Hillsdale—A. L. Lincoln.

OKLAHOMA.

Guthrie—Frank Olsmith.
Shawnee—A. D. Martin.
Lawton—George H. Block.

ARKANSAS.

Little Rock—Charles E. Taylor.
Pine Bluff—Dr. A. C. Jordan.
Texarkana—John P. Kline.
Hot Springs—W. W. Walters.

TRADE NOTES

Cast Iron Pipe.—Chicago: With the business already closed and numerous inquiries on their books, the leading pipe people seem justified in their opinion that this year's business will total above normal. Prices are firm. Quotations: 4-inch, $25.50; 6 to 12-inch, $24.50; 16-inch and up, $24. Birmingham: No reports are made of any lettings of consequence. Production is still less than for the same period last year. Quotations: 4 to 6-inch, $23; 8 to 12-inch, $22; over 12-inch, average $21. San Francisco: The demand continues active in all the Coast States. New York: Competition continues keen for all orders coming up. Quotations: 6-inch, carloads, $21 to $22.

Lead.—The market continues strong. Quotations: New York, 4.55c; St. Louis, 4.30c.

Large Motor Centrifugal Pumps.—The borough of South River, N. J., has placed an order for pumps for its new water works with the Buffalo Steam Pump Company, Buffalo, N. Y. This equipment consists of two 5-inch two-stage centrifugal pumps, each having a capacity of 800,000 gallons of water per day against a total head of 135 pounds. The pumps will be driven by 75-horsepower, 1,700-revolutions-per-minute, Fort Wayne motors.

Sewer Cleaning.—The Sieben System of Sanitation Company has recently received the following record of cost of cleaning sewers. N. M. Clancy, Superintendent of Sewer Cleaning and Repairs, says:

> On Ashland avenue sewer we operated the machine, cleaning a distance of 380 feet after the machine was set in the sewer in twenty-four (24) minutes. This sewer was about one-third full, a 15-inch pipe sewer. The test given the machine on Second street, in an 18-inch pipe sewer, was full within 6 inches of the top. We cleaned 280 feet in forty-four (44) minutes. On Second street, in a 15-inch pipe sewer, we cleaned 300 feet in thirty-six (36) minutes. This sewer was very badly congested, only about 4 inches of an opening in the top of the sewer.

J. E. Porter, Mayor of Kansas City, Kan., says:

> I wish to compliment you upon the efficiency of your sewer cleaning system, which I saw in operation upon a 10-inch sewer in the alley south of Minnesota avenue, between Ninth and Tenth streets. This sewer has given our Sewer Department much trouble, costing us hundreds of dollars a year keeping it in good condition. After getting your rods through the sewer, which I understand took about seven hours' work, this including time spent in taking out about 200 feet of our cleaning rods which were stuck in the sewer, it took just 47 minutes to run your cleaning apparatus the full 400 feet length of the sewer at a total cost of $9. This cost included time for three laborers and one man with a wagon, making the cost about .02½ cents per lineal foot.

Road Machinery.—Six years ago the J. I. Case Threshing Machine Company put on the market its power-steered, 10-ton steam road roller, which was then the only power-steered roller on the market. This year the company decided to put forth a complete line for road building. In addition to the road roller and road sprinkling wagons the company has been selling, it has added recently the perfection graders and drags, rock crushers, rotary stone screens, rooters, road scrapers, railroad and township plows, the Troy line of bottom dump wagons, boxes, reversible bottom dump wagons, Case municipal tractors, especially constructed for use on any kind of paved streets, and Case contractors' hauling engines.

Tarvia.—The Barrett Manufacturing Company has issued a 1911 edition of its book on Tarvia. As formerly, the three grades of Tarvia are: X, for use hot as a binding material; A, the next heaviest grade, also used hot, and B, which is light enough to be used cold. A modification of the methods of construction hitherto generally used is called Tarvia Modern Pavement, which is described as follows: The foundation is prepared as for ordinary macadam, but care should be taken to see that this foundation is properly drained and properly consolidated, for the best of surfaces can be destroyed by softness and movement below. Upon the foundation the base course is laid, using stone 3 inches to 1 inch in size. Usually a thickness of 4 inches, measured after rolling, will be sufficient. This course is filled, rolled as for ordinary macadam and then has spread upon it ½ inch of clean, sharp sand or good gravel. Over this, without further rolling, is sprayed "Tarvia-A" to the amount of one gallon to a square yard. Another layer of stone (3 inches to 1 inch) is then spread to such a depth that when rolled this course will be 2½ inches thick. It is then rolled thoroughly with a steam roller, until the Tarvia and sand are drawn up between the stone and until this layer of stone is bedded firmly into the stone below. The layer of Tarvia and sand holds this course firmly in place and cements the top course of the road thoroughly to the bottom course. A spraying of "Tarvia-X" is then given the road, using 1¼ gallons to a square yard, and a thin layer of ¾-inch stone is spread over the surface. Enough stone must be used to fill in all the chinks of the surface, making it smooth, but not enough should be used to leave any loose material on the top. The road is rolled again until perfectly smooth and a final coat of "Tarvia-A," amounting to one-half gallon to the square yard, is sprayed on and the road finished by adding pea stone or screenings and given a final rolling. The booklet is gotten up in the usual good style displayed by the Barrett company, and is handsomely illustrated.

Corcoran Coupling.—The Allyne Brass Foundry Company, Detroit, Mich., has issued a folder explaining the Corcoran joints for lead pipe, made without wiping. The folder states that an exceptionally good man and helper can wipe six joints in ten hours and that an inexperienced man can make six joints with the Corcoran coupling in one hour and the joints will be better. The company manufactures corporation cocks and inverted curb cocks.

Prevailing Rate of Wages.—An important decision regarding the subletting of a contract outside of a State where a different rate of wages prevails has been made by Justice Crane of the New York Supreme Court. The Thompson-Starrett Company had a contract for building the new municipal building in Manhattan. The company sublet the granite work to the Mount Waldo Granite Works, of Maine, which had the granite cut and trimmed by workmen at a daily wage of $3. For the same work $4.50 is paid in New York State. Justice Crane declared that there was nothing in the contract or in the labor law requiring the contractors to pay workmen of another State the wages prevailing in this State.

Smoke Prevention Compound.—Smoke Inspector Nelson and Superintendent Jerome of the Smoke Abatement League are conducting tests of a patent smoke prevention compound invented by William H. Murray, Norwalk, O.

Pyrene.—Six pieces of the Paterson (N. J.) fire apparatus have been equipped with Pyrene fire extinguishers, which have been given to the Fire Department by the Pyrene Manufacturing Company, 410 East Thirty-second street, New York, N. Y. One extinguisher will be placed on each chief's wagon and each of the three trucks. Fire Chief Stagg will have the extinguishers used on gasoline fires and fires from electric wiring.

Lighting Company Consolidation.—The Board of Public Utilities, Trenton, N. J., has decided to approve the proposed merger of the Shore Electric Company, the Seabright Electric Company and the Citizens' Light and Fuel Company of South Amboy into the Shore Lighting Company. The new company will be authorized by the board to issue $400,000 of 5 per cent mortgage bonds.

Incinerator Incinerated.—The Somerville, Mass., incineration plant was practically destroyed by fire last week, causing a loss of about $3,000. The blaze is supposed to have started by paper that littered the floor becoming ignited from the furnace.

Testing for Water Waste.—The Pitometer Company, 220 Broadway, New York, has resumed its series of tests for water waste at Yonkers, N. Y. Superintendent of Water Peene issued orders last week for the digging of holes, in which the company is to install the instruments used to measure and record the flow in the mains.

Garbage Plant.—C. C. Fisher, York, Pa., who has the contract for disposing of garbage at Bridgeport, Conn., has nearly completed the rebuilding of the works formerly belonging to the Bridgeport By-Products Company. The last pieces of machinery installed were a press and a dryer.

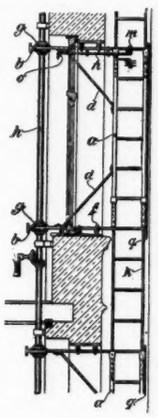
Sulphate Alumina.—Mechanical filtration plants to the number of 66 located throughout Pennsylvania and representing an investment of about $20,000,000 will be forced out of existence if a bill introduced in the Legislature by E. H. Fahey, Philadelphia, should pass. The bill aims to prohibit the use of alum and alum compounds in the filtration of water furnished to the public for drinking purposes. There are three manufacturing companies in Pennsylvania manufacturing the material; they are the Pennsylvania Salt Manufacturing Company, Charles Leunig & Co. and Harrison Brothers & Co.

Gas Engines.—The Bruce-Macbeth Engine Company, Cleveland, O., has published a new catalogue describing and illustrating its gas engines. At the front of the booklet a tabular statement of comparative costs of fuel for different kinds of power is given. A simple non-condensing engine is estimated to require 8 pounds of coal per horsepower, a compound condensing steam engine 3 pounds and a gas engine using producer gas about 1¼ pounds. An illustration of a 300-horsepower, four-cylinder gas engine installed at the city lighting plant, Canal Dover, O., serves to point out the fact that gas engines are a municipal proposition.

PATENT CLAIMS

987,494. APPARATUS FOR LIFE-SAVING IN CASE OF FIRE. Franz Scherrer, Berlin, Germany. Serial No. 559,810.

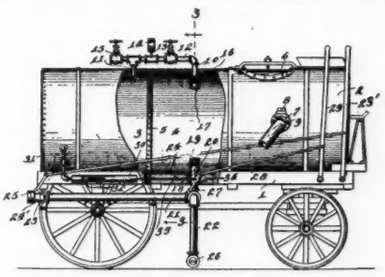
In combination in a device for life-saving from fire, a series of vertical ladders retractable within the window embrasures and normally concealed therein, side plates fixed to said embrasures and adapted to conceal one side of said ladders, covering plates fixed to the outer rail of said ladders



and adapted to close the space between each side plate and the corresponding window jamb, a pair of horizontal bars attached to the top and bottom respectively of each ladder section, means for supporting said bars and ladder sections, a vertical rotatable shaft entirely located within the building, and mechanism whereby the rotation of the shaft projects the entire set of ladders beyond the window embrasures and at a right angle thereto.

987,545. STREET-FLUSHING MACHINE. Jacob I. Brorby, Shenandoah, Iowa. Serial No. 576,453.

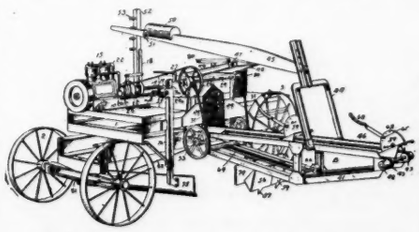
A sprinkling device comprising a tank, a partition dividing the tank into water and air compartments, means connecting the water and air compartments having a



valve therein to control the supply from one to the other, a valved discharge pipe connected with the water compartment, and means communicating with the air compartment and connected to the valve in the discharge pipe for controlling the flow through the discharge nozzle.

987,937. DITCHING APPARATUS. Joseph E. Wyckoff, Los Angeles, Cal. Serial No. 563,219.

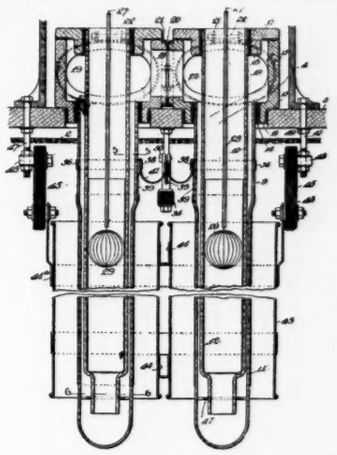
In ditching apparatus, in combination, a frame, mechanism hingedly connected at one end thereof with the frame, said mechanism including a frame and earth removing members mounted thereon, counterbal-



ancing means connected with said mechanism for raising and lowering the same, means coacting with the first means to hold the mechanism in adjusted position and permitting yielding thereof when the members meet with obstructions, and operative connections for the mechanism.

987,902. APPARATUS FOR PRODUCING OZONE. Clifford D. Meeker, East Orange, N. J., assignor to Gerard Ozone Process Company, New York, N. Y., a Corporation of New Jersey. Serial No. 575,393.

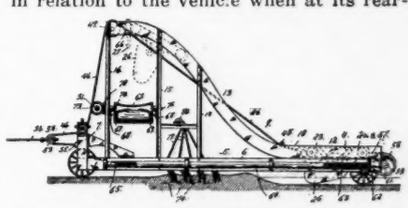
An ozone apparatus which comprises a tank, a cover therefor, ozonizing elements supported by the cover, a casing inclosing



the upper ends of the elements, a fluid passage communicating with the interior of the casing, a separate conduit box for each element, said boxes being connected in series, and a fluid passage from the boxes through a wall of the casing.

987,660. EXCAVATING-MACHINE. Leonard C. Wood, Denver, Colo. Serial No. 555,817.

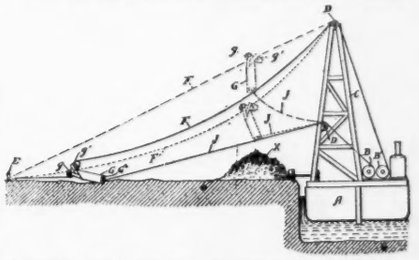
The combination with a vehicle, of a bucket normally locked against movement in relation to the vehicle when at its rear-



ward limit of movement, means connected with the bucket and vehicle for imparting forward travel to the latter, and means for releasing the bucket to allow it to travel independently of the vehicle.

987,612. EXCAVATOR-SHOVEL. Henry G. Butler, Kenosha, Wis. Serial No. 534,068.

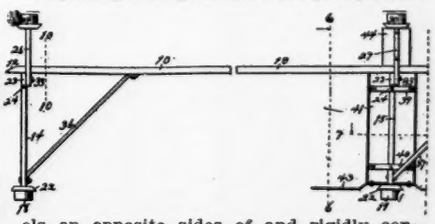
In an excavator shovel of the type described a body portion with a bottom hinged



thereto and means in connection with a drag line for controlling said bottom, substantially as set forth and shown.

987,879. COMBINED CURB AND GUTTER FINISHER. Alfred Horrabin, Iowa City, Ia. Serial No. 575,580.

A combined curb and gutter finisher, comprising a longitudinal face plate, trow-



els on opposite sides of and rigidly connected to and arranged transversely of said face plate, and supporting and guiding wheels at opposite ends of said trowels.

THE MUNICIPAL INDEX

In Which Are Listed and Classified by Subjects All Articles Treating of Municipal Topics Which Have Appeared During the Past Month in the Leading Periodicals

It is our purpose to give in the second issue of each month a list of all articles of any length or importance which have appeared in all the American periodicals and the leading English, French and German ones, dealing more or less directly with municipal matters. The index is kept up to date, and the month of literature covered each time will be brought up to within two or three days of publication. Our chief object in this is to keep our readers in touch with all the current literature on municipal matters. In furtherance of this we will furnish any of the articles listed in the index for the price named after each article, except that where an article is continued in two or three issues of the paper, the price given is for each of said issues. In addition to the titles, where these are not sufficiently descriptive or where the article is of sufficient importance, a brief statement of its contents is added. The length also is given, and the name of the author when it is a contributed article.

ROADS AND PAVEMENTS

Highways in Indiana. Address before National Good Roads Congress. By W. P. Blair. 1 p., Clay-Worker, March. 25 cts.

Roads and Pavements. Digest of remarks by Frank J. Eppele, Pres. New Jersey State Association of County Engineers, before Convention. 3 pp., The Public Officials Magazine, February. 10 cts.

The Highway, the Farmer and the Automobile. Illustrated. 2 pp., The Canadian Engineer, Mar. 2. 10 cts.

The Inter-Relation of Good Roads and Good Schools. Address before Southern Educational Association. By Chas. H. Hoyt. Illustrated. 2 1-2 pp., Good Roads, March. 10 cts.

The Economics of Modern Highway Engineering. Paper before American Society of Municipal Improvements. By Arthur H. Blanchard. 2 pp., Good Roads, March. 10 cts.

Road Construction, Some Ideas in Modern. By John McNeal. 1 p., Southern Good Roads, March. 10 cts.

The Art of Roadmaking. By Harwood Frost. 2 1-2 pp., The Surveyor and Municipal and County Engineer, Mar. 17. 25 cts.

The Effective Cheap Drag. Illustrated. 1 p., The Canadian Engineer, Mar. 2. 10 cts.

Systems of Road Building. By W. A. McLean. Paper before Good Roads Association of Ontario. 3 pp., Canadian Municipal Journal, April. 15 cts.

Method and Cost of Constructing a Macadam Road in Fine Grained Loose Soil Subject to Erratic Drainage Conditions. Illustrated. 3 pp., Engineering-Contracting, Feb. 15. 10 cts.

Meadow Roads as Constructed in Southern New Jersey Counties. Paper before New Jersey State Association of County Engineers. By E. D. Rightmire. 1 1-2 pp., Good Roads, March. 10 cts.

Construction and Care of Earth Roads. By G. W. Cooley, State Engineer of Minnesota. Illustrated. 3 pp., Good Roads, March. 10 cts.

Gravel and Earth Object Lesson Roads Constructed by the United States Government. 1 1-2 pp., Good Roads, March. 10 cts.

Gravel Road Building in Michigan. By Frank F. Rogers. Illustrated. 3 1-3 pp., Engineering-Contracting, Mar. 15. 10 cts.

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Niagara River Boulevard. Paper before Ontario Good Roads Association. By J. H. Jackson. 1 1-2 pp., Contract Record, Mar. 29. 15 cts. 2 pp., The Canadian Engineer, March 9. 10 cts.

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Ten Years' Experience of Tar-Grouted Granite Macadam in a Lancashire Urban District. By Geo. H. Ashworth and Vincent W. Laithwaite. 2 pp., The Surveyor and Municipal and County Engineer, Mar. 3. 20 cts.

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Traffic Records for Purposes of Comparison, Simplification of. By Maj. W. W. Crosby. 3 2-3 pp., Municipal Engineering, March. 50 cts.

Relation Between Modern Traffic and the Alignment and Profile of Highway Design. Paper before American Association for the Advancement of Science. By H. B. Drowne. 1 1-2 pp., Canadian Engineer, Mar. 30. 15 cts. 1 1-4 pp. Good Roads, March. 10 cts.

Street Traffic Data. Tabular Statement. 3 pp., Municipal Journal and Engineer, Mar. 22. 10 cts.

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Pavements in Grand Forks. Untreated and Treated Wood Blocks. Blome and Bitulithic Pavements. By H. G. Lykken, City Engineer. 1 p., Municipal Journal and Engineer, Mar. 15. 25 cts.

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Brick Pavements, Cracking of Cement Grouted, Causes and Remedies. Paper before the Michigan Engineering Society. By Earle R. Whitmore. 1 1-2 pp., Engineering-Contracting, Feb. 15. 10 cts.

New Standard Brick Rattler. Recommended by National Paving Brick Manufacturers' Association. Instructions for construction and use. 1 1-2 pp., Municipal Journal and Engineer, Mar. 15. 25 cts.

Concrete Street Paving in Mason City, Ia. Paper before Iowa Engineering Society. By F. P. Wilson. Illustrated, 1 1-2 pp., Cement Era, April. 10 cts.

Cement Concrete Paving. Paper before Middle West Cement Exhibition. By C. P. Chase. 7 pp., Midland Municipalities, April. 10 cts.

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Concrete Outlet Sewer at Fort Smith, Ark. By Matt and Bemis, contractors. Illustrated. 1 1-2 pp., Municipal Engineering, April. 25 cts.

Pipe, Vitrified Sewer and Culvert. Portion of official report of the 25th annual convention of National Brick Manufacturers' Association. By George H. Tefft. Illustrated. 6 3-4 pp., The Clay Worker, February. 25 cts.

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Observation upon the Law Relating to the Pollution of Rivers by Sewage. By A. C. Farquharson. 9 pp., Journal, Royal Institute of Public Health, March. 60 cts.

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Fire Hazard Standpoint, Modern Garage from a. By N. B. Pope, 1½ pp., Fire and Water, April 5. 10 cts.

Fire Analyzed. From an address by W. H. Merrill. 3 pp., Insurance Engineering. February. 25 cts.

Fires, Warehouse. Illustrated, 8 pp., Insurance Engineering, February. 25 cts.

New York City Factory Holocaust. Illustrated, 3 pp., Fireman's Herald, April 1. 5 cts. Illustrated, 1 p., Fire and Water, Mar. 29. 10 cts.

Fire Drills to be Compulsory in New Jersey. 1 p., Fire and Water, Mar. 29. 10 cts.

Department, Mobile's Efficient Fire. Illustrated, 1 p., Fireman's Herald, Mar. 4. 5 cts.

Methods, Prussian Fire. By Alcide Chausse. 8 pp., Insurance Engineering, February. 25 cts.

Association, The National Fire Protection, and its Work. Abstract of address before National Association of Cement Users. By W. H. Merrill. 2 pp., Cement, February. 20 cts.

Purpose and Work of the Underwriters' Laboratory. Paper before International Association of Fire Engineers. By W. H. Merrill. ½ p., Engineering News, Mar. 30. 15 cts.

Police Dog, The German, and What He Does. Illustrated, 1½ pp., American Review of Reviews, April. 25 cts.

GOVERNMENT AND FINANCE

Commmission Government in the Far West. ½ p., Municipal Journal and Engineer, Mar. 22. 10 cts.

Commission Plan of City Government Propaganda in New York and New Jersey. 2-3 p., Engineering News, Mar. 16. 15 cts.

Initiative and Referendum Defects. Illustrated, 2 pp., Public Service, March. 20 cts.

Charter, The Indianapolis. By Augustus Lynch Mason. 6 pp., The Public Officials' Magazine, February. 10 cts.

Municipal Law, Iowa. By A. W. Osborne. 3 pp., Midland Municipalities, April. 10 cts.

Voting, Preferential System of. 1-3 p., Municipal Journal and Engineer, April 5. 10 cts.

Municipal Ownership in Calgary. 1-4 p., Municipal Journal and Engineer, Mar. 22. 10 cts.

Efficiency Records in the Civil Service of the City of New York. By Leonhard Felix Fuld, Examiner, New York Municipal Civil Service Commission. 3½ pp., The American City, March. 15 cts.

Milwaukee Bureau of Economy and Efficiency. By P. H. Myers. 1 p., Engineering News, Mar. 30. 15 cts.

Accounting, Municipal. By Charles F. Gettemy, Director of Massachusetts Bureau of Statistics. 6 pp., The Journal of Accounting, March. 25 cts.

REFUSE DISPOSAL

Refuse Disposal. Annual review of progress in. 4 pp., Surveyor, Jan. 27. 20 cts.

Garbage, Disposal of, at Newport. 1-4 p., Municipal Journal and Engineer, Mar. 29. 10 cts.

Incinerator, Milwaukee. An explanation. 1-4 p., Municipal Journal and Engineer, Feb. 8. ½ p., Mar. 29. 10 cts.

Installation of an Incinerator. By J. A. Stewart, manager, Edmunton incinerator. 2 pp., Canadian Engineer, Feb. 2. 15 cts.

Incinerator Construction. By George L. Bliven, M.E. Illustrated, 3 3-4 pp., Pacific Builder & Engineer, Feb. 4. 15 cts.

The Technique of Combustion and Production of Energy from Municipal Wastes. By Frederick Meyer. Illustrated, 6 pp., La Technique Sanitaire, March. 50 cts.

The Garbage Crematory at Houston, Tex. Paper before a convention of Health Officers of Texas. By David M. Duller, City Engineer. Illustrated, 4 pp., Municipal Engineering, March. 50 cts. Illustrated, 2½ pp., Canadian Engineer, Mar. 30. 15 cts.

Gas Fired Animal Crematory at Boston. By Huntington Smith. Illustrated, 1 p., Progressive Age, Jan. 16. 20 cts.

Reduction Plant, Municipal Garbage, at Columbus, O. Illustrated, 4 pp., Municipal Engineering, April. 25 cts.

BRIDGES AND MATERIALS

Highway Bridges from the Investment Point of View. Address before Ontario Good Roads Association. By C. R. Young. 2 pp., Engineering Record, Mar. 18. 10 cts. 3 pp., The Canadian Engineer, Mar. 16. 10 cts. 2 pp., Engineering-Contracting, Mar. 15. 10 cts.

Municipalities and Highway Bridges. By C. R. Young. 3 pp., Contract Record, Mar. 29. 15 cts.

The Bridges of Nova Scotia. Illustrated, 2 pp., The Canadian Engineer, Mar. 16. 10 cts.

Highway Bridge Built of Separately Molded Members. Illustrated, 2 pp., Engineering Record, Mar. 25. 10 cts.

Concrete Abutments for Highway Bridges: Diagrams for Determining Quantities and Cost. Paper before Illinois Society of Engineers and Surveyors. By H. E. Bilger. Illustrated, 3 pp., Engineering-Contracting, Feb. 15. 10 cts. Illustrated, 2 pp., Engineering Record, Mar. 18. 10 cts.

Substructure of the Municipal Bridge over the Mississippi River at St. Louis, Mo. By S. W. Bowen. Illustrated, 3 2-3 pp., Engineering News, Mar. 16. 15 cts. Illustrated, 8 pp., Engineering-Contracting, Mar. 8. 10 cts.

Concrete-Filled Steel Arches; Steel is Reinforced with Concrete. Paper before N. A. C. U. Convention. By Henry H. Quimby. Illustrated, 3 pp., Concrete, March. 15 cts. Illustrated, 2 3-4 pp., Good Roads, March. 10 cts.

Specifications, Relation of Bridge, to Highway Improvements. Paper before Indiana Engineering Society. By Albert Smith. 3 pp., Municipal Engineering, April. 25 cts.

Viaduct, Dallas, Oak Cliff. By V. H. Cochrane. Illustrated, 3 pp., Engineering Record, Apr. 1. 10 cts.

(*Continued next week.*)

THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage, Water Supply and Public Lighting—Fire Equipment and Supplies—Bridges and Concrete Work—Sanitation, Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we cannot guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
			STREET IMPROVEMENTS	
Missouri	Kansas City	Apr. 14	Furnishing 2,000 tons of asphalt cement or material from which it can be manufactured	R. L. Gregory, Pres. Bd. Pub. Wks.
Illinois	E. St. Louis	Apr. 14	Improving 38th street and an alley	Jas. F. Parr, Asst. City Engr.
Ohio	Columbus	Apr. 14, noon	Paving Summit street with asphalt or brick	City Clerk.
Ohio	Cincinnati	Apr. 14, noon	Grading, setting granite curb and paving with brick portion of Ross Alley	John J. Wenner, Clk. Bd. Pub. Serv.
Illinois	Chicago	Apr. 14, 11 a.m.	Constructing sidewalks on various streets	Chas. A. V. Standish, Secy. B. L. I.
New Jersey	Jersey City	Apr. 14, 3:30 p.m.	Furnishing one 12-ton macadam road roller	J. C. Sweeney, Clk. Boulevard Comrs.
Minnesota	Kathio	Apr. 14	Grading, ditching and placing culverts	E. Dinwiddle, Town clerk
New York	New York	Apr. 14	Paving and repaving various streets with sheet asphalt, wood block and granite, in all 27,000 sq. yds.	Geo. McAneny, Pres. Boro. Manh.
Texas	Austin	Apr. 15	Paving with vitr. brick, wood block and bit., about 45,700 sq. yd	John O. Johnson, City Clerk.
Ohio	Marysville	Apr. 15	Improving roads in York township	Bert J. Shelton, Audr. Union Co.
Indiana	Evansville	Apr. 15, 10 a.m.	Paving with brick on 5-in. conc. found., various alleys	Simon A. Bartholome, Ck. Dt. P. W.
Indiana	Rushville	Apr. 15	Constructing macadam road in Anderson twp.; 2 gravel roads in Ripley and Posey townships	J. M. Stone, County Auditor.
New Jersey	Swedesboro	Apr. 15	Constructing Railroad Avenue	Wilmer Egee, Mayor.
Ohio	Cleveland	Apr. 15, 11 a.m.	Grading, draining and improving Wooster Pike Road No. 3	County Commissioners.
Ontario, Can	Brampton	Apr. 17, 6 p.m.	Constructing 8,000 sq. yds. pavement and 3,500 lin. ft. of concrete curb and gutter	W. M. Tredgold, Town Engineer.
Ohio	Portsmouth	Apr. 17	Grading, ditching and culverting Eichenlauben Road	County Commissioners.
Tennessee	Knoxville	Apr. 17	Paving various streets	City Clerk.
Wisconsin	Beloit	Apr. 17, 10 a.m.	Improving several streets	Board Public Works.
New York	Johnstown	Apr. 17	Paving portion of West and East State streets, about 11,815 sq. yds. bituminous macadam and 3,000 stone curbing and 1,885 sq. yds. cobble gutter	Grover E. Yardon, City Clerk.
North Dakota	Grand Forks	Apr. 17	Paving various streets	City Clerk.
New Jersey	Washington	Apr. 17	Macadamizing 6.04 miles of road	Jos. R. Thatcher, Director.
Kentucky	Louisville	Apr. 17, 2 p.m.	Constructing and repairing sidewalks in various streets	Roger G. McGrath, Secy. Bd. P. W.
Ohio	Beach City	Apr. 17	Paving Main and West sts. with vit. block on gravel foundation	H. B. Ward, Clk. Council.
Missouri	Webb City	Apr. 17, 5 p.m.	Constructing 8,266 sq. yds. asphalted macadam pavement and 4,718 lin. ft. combined concrete curb and gutter	A. J. McKenzie, City Engr.
Michigan	Ludington	Apr. 17	Paving various streets	Dean Thompson, City Clerk.
New Jersey	Maplewood	Apr. 18	Oiling about 8 miles of streets for the coming season	Edw. R. Arcularious, Clerk.
Ohio	Dayton	Apr. 18, noon	Grading and paving with macadam, brick, sheet asphalt, creosoted wooden blocks or other material various streets and avenues	J. C. Ely, Dir. Pub. Serv.
Georgia	Dublin	Apr. 18, noon	Paving with vitrified brick about 600 sq. yds	A. P. Hilton, City Clk.
New York	N. Tarrytown	Apr. 18, 10 a.m.	Improving portions of two roads, 3.67 miles	Edward F. Hennessey, Town Clerk.
Ohio	Bowling Green	Apr. 19	Grading and macadamizing various county roads	Commissioners of Wood County.
Michigan	Morenci	Apr. 21, 1 p.m.	Paving various streets with brick	C. R. Kellogg, Village Clerk.
Utah	Salt Lake City	Apr. 21	Curbing and pav. in Pav. Exten. No. 64, 6th S. South St	H. G. McMillan, Chm. Bd. Pub. Wks.
Dist. of Col	Washington	Apr. 22, 2 p.m.	Making repairs to asphalt pavements for period end. June 30, '13	Cuno H. Rudolph, Comr.
Kentucky	Maysville	Apr. 24	Paving with Tarvia with macadam base various streets	City Clerk.
New Jersey	Moorestown	Apr. 24	Constructing macadam road on Central ave. & No. Church rd.	Wm. B. Lippincott, Chm. Twp. Com.
Ohio	Ashland	Apr. 24	Grading and paving with brick Diamond Alley	Edgar Koehl, City Clerk.
New York	Albany	Apr. 24, 26, 28	Constructing various State highways	S. Percy Hooker, Chm.St.Hwy.Com
Flordia	Jacksonville	Apr. 28, 10 a.m.	Resurfacing St. Johns ave. about 27,000 sq. yds. with as. mac.	Gail L. Barnard, County Engr
Ohio	Cincinnati	Apr. 28, noon	Improving the Eight Mile road in Anderson township	Stanley Struble, Pres. Bd. Co. Comrs.
Ohio	Ravenna	May 1	Grad. and pav. with brick 2.12 miles of county road	Commissioners Portage County.
New York	Hudson	May 2, 10:30 p.m.	Repaving portion of Warren Street with vitrified brick	Commissioners Public Works.
			SEWERAGE	
Ohio	Niles	Apr. 14	Constructing 4½-in. sewer in Dist. No. 6	F. M. Brewer, City Engineer.
Illinois	Freeport	Apr. 14, 2 p.m.	Constructing sanitary sewers in various streets	W. T. Rawleigh, Chm. Bd. Loc. Imp.
Missouri	St. Louis	Apr. 14, noon	Construction of sewers in Glaise Creek Sewer Dist. No. 4	Board Public Improvements.
Missouri	St. Joseph	Apr. 15	Constructing 36-in. vitrified pipe main sewer; also 4-ft. concrete pipe sewer	J. P. Strite, Secy. Bd. Pub. Wks.
Maryland	Easton	Apr. 15, noon	Constructing, complete, about 6 mi. pipe sewers, 8 to 15-in., Y branches, manholes, grading etc., Clyde Potts, 30 Church St., New York City, Engineers	M. M. Higgins, Pres. Sewer Com
Wisconsin	Kenosha	Apr. 15, 2 p.m.	Constructing Main Trunk sewer	M. J. Scholey, Chmn.
New York	Buffalo	Apr. 15, 11 a.m.	Constructing 18, 15, 12 and 10-in. sewers in various streets	Francis G. Ward, Comr.
Iowa	Burlington	Apr. 15	Furnishing a direct connected centrifugal pump and steam turbine: w. w. surface condenser and air pump, etc., etc	Frank Lawler, Supt. Citizen W. Co.
Ohio	Dayton	Apr. 17	Constructing sanitary sewers in various streets	Wm. A. Budroe, City Clerk.
New York	Fulton	Apr. 17	Furnishing c.i. water pipe and standard castings	J. A. Foster, Pres. Bd. Pub. Wks.
Minnesota	Winona	Apr. 17	Constructing 8, 12, 15, 18 and 20-in. pipe sewers, manholes and catch basins	O. B. Leland, Asst. City Engr.
Minnesota	Brainerd	Apr. 17, 8 p.m.	Constructing sewers in Districts 4 and 5	V. N. Roderick, City Clerk.
Pennsylvania	Harrisburg	Apr. 17, noon	Constructing sanitary sewers in various streets	W. W. Caldwell, Comr. Highways.
Massachusetts	Attleboro	Apr. 17, 3 p.m.	Furn. c. i. pipe and spec. cast.; also manhole collars and covers	Chas. S. Holden, Chm. Com. Sew.
Illinois	Marshall	Apr. 17, 3 p.m.	Constructing 1,311 lin. ft. of 24-in. vitrified pipe sewer	Seymore Hurst, Mayor.
New York	East Aurora	Apr. 18	Constructing sewer system including disposal plant, value of work about $110,000	Alfred Brotherhood, Pres. Bd. V. T
Manitoba, Can.	Winnipeg	Apr. 19	Constructing a wooden stave conduit pipe line	H. N. Ruttan, City Engr.
Maryland	Baltimore	Apr. 19	Furnishing sewage screens for sewage disposal works	Calvin W. Hendrick, Ch. Eng. Sew. Com
Illinois	Chicago	Apr. 19, noon	Furnishing iron sewer castings; furn. sewer pipe within South Park system	James H. Burdett, Secy. S.P. Comrs.
Oregon	Central Point	Apr. 20, 5 p.m.	Constructing sewer system complete	City Recorder.
Ohio	Amherst	Apr. 20	Constructing sewer system and sewage disposal plant	City Clerk.
Ohio	Dayton	Apr. 21, noon	Constructing storm water sewers in various streets	J. C. Ely, Dir. Public Service.
Oregon	Central Point	Apr. 21	Constructing sewer system	J. W. Jacobs, City Recorder.
South Carolina	Rock Hill	Apr. 25	Constructing sewer system complete	E. L. Barnes, Secy. Sew. Com.
Ohio	Toledo	Apr. 27, noon	Installing complete high pressure fire system	John M. Babcock, Clk. of Council.
Florida	Pensacola	May 2	Constructing 15,060 lin. ft. storm water drains from 10 to 66-in. in diam.; and 23,880 lin. ft. of san. sewers from 6 to 24-in.	John A. Merritt, Chm. Bd Bond Tr.
West Virginia	Huntington	May 8, 1 p.m.	Constructing lateral 12-in. sewers in various streets	John Coon, Comr. Streets.
California	San Jose	July 3	Construct septic tank for County hospital	City Clerk.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
WATER SUPPLY				
Illinois	Aurora	Apr. 14	Furnishing and installing boilers; separate bids for one and two boilers respectively to be safety water tube type of about 230 h.p. each, and for working pressure of 150 lbs.	T. D. Stimson, Supt. Water Dept.
Maine	Ft. McKinley	Apr. 15	Constructing chemical water softening plant.	Capt. Jos. F. Gohn, Con. Q.M.U.S.A.
Ohio	Cleveland	Apr. 15, noon	Constructing water main in Kinsman road, Newburg	J. W. Shimek, Clk. Bd. Control.
New York	Fulton	Apr. 17, 8 p.m.	Furn. 740,000 lbs. pipe and 5,000 lbs. standard castings	J. A. Foster, Pres. Bd. Pub. Wks.
Ohio	Niles	Apr. 18, noon	Constructing 3,000,000 gal. filtration plant	F. M. Brewer, City Engineer.
California	San Francisco	Apr. 20	Constructing dam 200 ft. high	Michael Casey, Pres. Bd. Pub. Wks.
Montana	Helena	Apr. 20, 8 p.m.	Con. water works system, reservoir, pipe line & distri. system.	J. A. Mattson, City Clk.
North Carolina	Morehead	Apr. 20	Installing water works	G. D. Canfield, Chm W. W. Com
Dist. of Col.	Washington	Apr. 21, 2 p.m.	Furn. 2,411 tons 16 and 20-in. cast iron water pipe; and 90 tons cast iron water pipe specials	Cuno H. Rudolph, Comr.
North Dakota	Fargo	Apr. 27	Furnishing a high duty crank and fly wheel pumping engine with a capacity of 4,000,000 gals. each 24 hours; constructing a water purification plant complete 4,000,000 gals daily	E. R. Orchard, City Auditor.
Ohio	Toledo	Apr. 27	Installing complete highpressure fire system including c. i. pipe, hydrant etc., except the pumping station, machinery, etc.	F. Shane, Secy. Bd. Pub. Service.
Pennsylvania	Somerset	Apr. 27	Constructing a reservoir	Chas. I. Shaver, Secy. Boro. Council.
Florida	Fort Dade	Apr. 29, 10 a.m.	Constructing extension of water system	Construct. Quartermaster, U.S.N.
New Jersey	Skillman	May 1, 10:15 a.m.	Extending water system, together with necessary hydrants, gates, valves, etc., at Village for Epileptics	Jonas A. Fuld, Secy. Bd. Managers.
BRIDGES				
Pennsylvania	Chambersburg	Apr. 14, 11 a.m.	Erecting reinforced concrete bridge over Muddy Run	E. K. Raff, Clk. County Comrs.
Indiana	Decatur	Apr. 14	Constructing the Abe Egley bridge	Board of Co. Comnrs.
Oregon	Portland	Apr. 14, 2 p.m.	Constructing the West Portland Bridge	F. S. Shields, County Clerk.
Wisconsin	Kenosha	Apr. 15, 4 p.m.	Rebuilding and altering Middle St. Bridge	R. H. Moth, City Engr.
Kansas	Lawrence	Apr. 15, noon	Constructing 2 stone abutments and 32-ft. girder span	W. R. Green, County Clerk.
Idaho	Moscow	Apr. 15, noon	Constructing bridge across Paradise Creek	Homer E. Estes, Clk. Bd. Co. Com s
New Mexico	Las Vegas	Apr. 17	Constructing 3 bridges	Lorenzo Deladgo, Probate Clerk.
Ohio	Warren	Apr. 17, 1 p.m.	Construct concrete bridge over Little Squaw Creek, Liberty twp	Fred T. Stone, County Auditor.
Kentucky	Paducah	Apr. 17	Constructing a rein. conc. bridge 43 ft. wide and 295 ft. long	L. A. Washington, City Engr.
Ohio	Niles	Apr. 17, 1 p.m.	Constructing concrete bridge over Little Squaw Creek	Fred T. Stone, County Auditor.
Texas	Galveston	Apr. 17, 11 a.m.	Constructing reinforced concrete bridge	John M. Murch, County Auditor.
Pennsylvania	Wilkes Barre	Apr. 18, 2 p.m.	Constructing sixty bridges	James M. Norris, County Comp.
Pennsylvania	Easton	Apr. 18	Constructing a reinforced concrete bridge	Comrs. Northampton County.
Illinois	Aurora	Apr. 20, 2 p.m.	Constructing a new bridge	City Clerk.
Ohio	New Lexington	Apr. 24	Constructing bridge over Rush creek	Auditor Perry County.
Illinois	E. St. Louis	Apr. 25	Constructing 5 railroad bridges in Madison County	H. D. Sexton, Pres. Bd. Trustees.
LIGHTING AND POWER				
Alabama	Troy	Apr. 17	Furn. 1 stationary steam engine, 400 H.P., 150 lbs. initial pressure; 1 electric generator, 250 kva., 60 cycles 3-phase, 2,300 volts; 1 pump, electrically driven capacity not less than 500 gals. per minute against 200 lbs. working pressure; 1 motor to drive pump; transmission line material for 3-phase line 3½ miles long, size of wire No. 4 B&S	A. B. Campbell, Supt. E. &W.Dept
Ohio	Dayton	Apr. 20, noon	Ornamental lighting with electricity portions of various streets	J. C. Ely, Dir. Pub. Service.
Manitoba, Can.	Winnipeg	May 1, 11 a.m.	Furnishing ornamental lighting standards	Magnus Peterson Secy. Civic B. Con.
California	Benicia	May 1	Furn. elec. supplies for year ending June 30	Lieut-Col. J. W. Benet, Com. Officer
FIRE EQUIPMENT				
Sask., Can.	Regina	Apr. 17	Furn. combination hose and chemical wagon; 1,700 feet double jacket rubber lined fire hose; 2 hydrant gate valves; two plays pipes and other apparatus	A. J. McPherson, City Comr.
Alberta, Can.	Calgary	Apr. 20, noon	Furnishing one combination motor fire engine and hose wagon; one motor hose wagon, one motor 85-ft. aerial truck	W. D. Spence, City Clerk.
New Jersey	Paterson	Apr. 21	Furn. automobile hook and ladder outfit and converting 2 first-class fire engines into gasoline-propelled vehicles	T. S. Standeven, City Clk.
New Jersey	**Princeton**	**July 5**	**Furn. auto pumping engine**	**E. M. Updike, Chm. F. & W. Com.**
MISCELLANEOUS				
Utah	Eureka City	Apr. 14	Constructing a jail	E. W. Redmond, City Recorder.
Kansas	Hutchinson	Apr. 14, 3 p.m.	Sprinkling various streets	Ed Metz, City Clerk.
Ontario, Can.	Goderich	Apr. 15	Erect. municipal building Combined Town Hall and Fire Hall	L. L. Knox, Town Clerk.
Wisconsin	Richland Center	Apr. 18, 7:30 p.m.	Erecting 110-ft. or 125-ft. brick or concrete chimney	City Clerk.
New Jersey	S. Orange	Apr. 18	Oiling about 8 miles of street during coming season	William H. Kemp, Chm. Twn. Com.
Washington	Pasco	Apr. 18	Constructing reinforced concrete city hall; also furn. two street sprinklers, and one flusher	L. H. Koontz, City Clk.
Indiana	Indianapolis	Apr. 20, 10 a.m.	Repairing Guardians' Home; and Marion County Asylum for Poor; also furnishing 1 road scraper with scarifier attach.	Albert Sahm, County Auditor.
West Virginia	Moorefield	Apr. 20, 11 a.m.	Constructing new county court house	C. B. Welton Clk. County Court.
Georgia	Waycross	Apr. 20, noon'	Constructing jail and jailer's home	H. J. Berry, Clk. C. Rd. & Rev.
Montana	Glendive	Apr. 21	Constructing new concrete jail, and construct. steel cells	R. L. Wyman, Clk. Bd. Coun. Comrs.
South Africa	Johannesburg	Apr. 21, noon	Furn. 2 patrol motor fire engines	Town Clerk.
Pennsylvania	Reading	Apr. 24, noon	Constructing new library buildings	Chas. H. Hunter, Secy. Bd. Trust.
Massachusetts	Boston	Apr. 24	Disposal of the refuse of the city collected by the Public Works Department, except W. Roxbury and E. Boston Dists., for a term of ten years	Louis K. Rourke, Comr. Pub. Wks.
Michigan	Grand Rapids	Apr. 29, 3 p.m.	Repairing and construct. piers at various habors in Michigan	C. S. Riche, Lieut. Col. Engrs.
Ohio	Cincinnati	May 10, noon	Constructing hospital buil lings	Messrs. Hannaford & Sons, Arch.
California	Oakland	May 11	Constructing city hall, value of contract $1,000,000	Frank R. Thompson, City Clerk.

STREET IMPROVEMENTS

Clarksville, Ark.—Johnson County Commissioners have selected Civil Engineer W. A. Reams, Fort Smith, Ark., to make survey for proposed roads improvement.

Little Rock, Ark.—Bids will soon be asked for twelve blocks of wood block paving, at an approximate cost of $45,000, in West 23d st. Improvement Dist.—W. F. Reichard, 204 Riegler Bldg., Engineer.

Los Angeles, Cal.—Improvement of Wilshire Boulevard with bitulithic pavement is being considered.

Stockton, Cal.—San Joaquin Highway Commission is planning oiling of three roads; plans and specifications will be prepared for oiled macadam on four roads; bids will soon be asked for asphalt macadam work on North Stockton road, Copperopolis and French Camp roads.

Washington, D. C.—District Commissioners have decided to expend $167,000 on resurfacing Corcoran, 4th, O, M, 15th, 19th and numerous other streets.

New Castle, Del.—Council received no bids April 3 for $30,000 street paving bonds.

Wilmington, Del.—Bids will be received April 18, noon, for $80,000 highway improvement bonds. Daniel Thompson, Chairman, Finance Committee.

Brooksville, Fla.—Town will vote April 25 on $2,000 bond issue for constructing sidewalks and $7,000 for paving streets.—W. A. Thaxton, Town Clerk.

Summerville, Ga.—Citizens have voted $75,000 bonds for street, sewer and water improvements.

Nezperce, Ida.—Town Trustees have decided to macadamize number of streets at once; bids asked.

Harrisburg, Ill.—Township has voted $35,000 bonds to build rock roads.

Peoria, Ill.—Contracts will soon be let for paving with brick portions of 6th ave., South and Sanford sts.

Bluffton, Ind.—Petition has been filed in Wells Commissioners' Court asking for stone road about 1¾ miles long on Wells-Adams county line, south of Vera Cruz.

Evansville, Ind.—Bids will be received by Board of Public Works on improvement of four alleys.

Evansville, Ind.—Paving of Blackford ave., between Garvin and Kentucky aves., has been ordered.

Greensburg, Ind.—Council will soon ask for bids for paving with brick Main st.

Michigan City, Ind.—Plans and specifications are being prepared for paving Baltimore st., Wabash st. and Willard ave.—M. R. Miles, City Engineer.

Richmond, Ind.—Wayne County Commissioners will soon ask for bids for the improvement of National road west of the city to the center township line.

Mount Sterling, Ky.—Council has passed ordinances providing for construction of 11,250 sq. yd. of brick streets in business section of the city; cost, $1.75 per square yard.

Winfield, La.—Road Commission of Winn Parish has planned about 635 miles of road improvement to cost $50,000.

Oakfield, Me.—Town has appropriated $1,500 for highways.—H. P. Sprague, Town Clerk.

Perham, Me.—Town has appropriated $1,600 for highways. — A. A. Spaulding, Town Clerk.

Baltimore, Md.—Council has passed ordinance providing for harbor front boulevard for South Baltimore; plans by Harbor Engineer Lackey call for street 106 ft. wide throughout length; also for construction of pier at Hughes and Covington sts.

Cambridge, Mass.—Mayor J. Edward Barry has recommended replacing of gravel sidewalks with brick or granolithic.

Marblehead, Mass.—Town has appropriated $50,000 for macadamizing 10 miles of town roads; $3,500 for granolithic sidewalk at causeway and $2,000 to make repairs on drain at Clifton. John G. Stevens, Chairman Selectmen.

Whitinsville, Mass.—Town has appropriated $5,500 for highways and small bridges.

Detroit, Mich.—Estimates for street work have been prepared by Board of Public Works for repairing, patching and resurfacing with asphalt, $457,558; resurfacing with brick, $205,704; repaving with sheet asphalt, $175,610; repaving with brick, $316,391; repaving with creosoted block, $22,984. J. J. Hoarer, Commissioner.

Escanaba, Mich.—Township of Bark River has voted $6,000 bonds for highway purposes and Township of Wells $1,000 bonds for same purpose.

Grand Haven, Mich.—Ottawa County has voted bond issue for good roads.

Ludington, Mich.—Citizens have defeated proposition to expend $150,000 on good roads.

Zeeland, Mich.—Zeeland Township has voted bonds for good roads.

Akeley, Minn.—Township of White Oak has voted $5,000 bonds for improvement of roads.

Grenada, Miss.—City has asked bids on construction of 75,000 to 150,000 ft. granolithic sidewalks according to specifications L. B. James, City Recorder.

Omaha, Neb.—City is figuring on ten miles of new paving to begin season.

Long Branch, N. J.—Council has decided to resurface portion of five streets.—B. B. Newcomb, City Clerk.

Long Branch, N. J.—Citizens will vote May 9 on $65,000 bonds for resurfacing asphalt streets.—E. W. Packer, Mayor.

New Brunswick, N. J.—Plans for top dressing pavement on Livingstone ave. with asphalt are being considered by County Board of Freeholders.

Paterson, N. J.—County Engineer Ferguson has prepared plans for improvement of five roads.

Woodbury, N. J.—Street Committee is considering advisability of using oil on highways.

Binghamton, N. Y.—Commissioner of Public Works Chas. S. Darling has planned number of street improvements in the Eleventh Ward.

Cortland, N. Y.—Board of Public Works has passed resolutions that Grant st., Stevenson st. and Harrington ave. shall be paved with slag.

Fulton, N. Y.—Board of Public Works has received petition from residents of Cayuga st., between Fourth and Fifth sts.. asking that this part of the street be paved.

Long Island City, L. I., N. Y.—Queens Boro Council is considering paving with asphalt block on concrete foundation of 1st ave. from Payntar to Washington st.; cost, $18,900.

Niagara Falls, N. Y.—Board of Works has ordered estimates prepared for pavement of Portage rd. Buffalo ave. to Main st.

Rockville Centre, L. I., N. Y.—Village has voted $7,500 for improvement of roads and water system.

Whitesboro, N. Y.—Village has voted $19,400 for paving streets.

Andrews, N. C.—City is considering $20,000 bond issue for street improvement, electric lights and water works.

Murphy, N. C.—Murphy Township Highway Commission is considering construction of about 30 miles macadam road, and will award contracts as rapidly as possible. W. H. Woodbury, Chairman.

Salisbury, N. C.—Boone Township has petitioned Rowan County Commissioners to order election to vote on bonds for macadamizing roads.

Salisbury, N. C.—Davidson County Commissioners are considering election on bonds for macadamizing public roads in Boone Township.

Bellaire, O.—Council has decided to pave South Bellmont st. at cost of about $18,000.

Cincinnati, O.—Council has passed ordinance for issuance of $10,000 bonds for Hickory and Jay sts. and $2,000 for improvement of Alice st.

Findlay, O.—Henry County Commissioners are advertising for bids for construction of about 30 miles of new stone roads, varying in length from 3 to eight miles; another petition is now on file with Commissioners asking for a joint pike between counties of Hancock, Henry and Putnam; average cost of stone roads per mile in Henry County is about $5,000.

Marion, O.—Bids will be received about April 24 for constructing 7 miles macadam road. C. L. Allen, County Auditor.

Nottingham, O.—Bids will be received by J. S. Steineke, Village Clerk, April 29, for $14,594 street improvement and water main bonds.

Toledo, O.—County Commissioners have directed County Surveyor to prepare plans and specifications for macadamizing seven stretches of country roads.

Toledo, O.—Council is considering repaving of Jefferson ave.

Wyoming, O.—Bids will be received April 24 by W. A. Clark, Village Clerk, for $8,500 street repair bonds.

Ashland, Ore.—Citizens have voted $35,000 bonds for paving street intersections.

Forest Grove, Ore.—Council has decided to pave 19 blocks of city streets with bitulithic hard surface pavement.

Carbondale, Pa.—Mayor A. L. Sahm has recommended number of street improvements.

Washington, Pa.—Bids have now been advertised for the construction of one mile of brick road leading from McDonald borough line toward Venice, three miles of brick road leading from Colvin farm near Charleroi to Bentleyville borough line, and for two miles of macadamized road on what is known as the Prosperity-Dunns Station road, from village of Prosperity toward Dunns Station.

Maryville, Tenn.—Citizens have voted $300,000 bonds to build pike roads.

Crockett, Tex.—Citizens have voted $150,000 bonds to build new roads.

Dallas, Tex.—City Commissioners have ordered grading and excavating of Grant ave., preparatory to paving, and paving of Cole ave., Lemmon to Knox sts.

Dallas, Tex.—Bids will be asked for grading and filling Bishop ave.; work includes roadway, 8,910 cu. yds. of cut and 2,054 yds. of fill; for sidewalks, 6,129 yds. of cut and 3,761 yds. of fill.

Galveston, Tex.—Bids will be asked by County Commissioners for sloping, bulkheading and surfacing county highway from city limits to causeway.

Groesbeck, Tex.—Citizens have voted $12,000 bonds to build sidewalks.

Houston, Tex.—Paving of Chartres st. has been ordered and work will soon be started.

Smithville, Tex.—Smithville district of Bastrop County will vote on $100,000 of road bonds.

Logan, Utah.—County will vote May 6 on $150,000 bonds for building roads and bridges.

Everett, Wash.—Paving of South Colby ave. with asphalt is being considered.

Spokane, Wash.—Board of Public Works is considering improvement of parking strip along the center line of Riverside ave., cost, $4,700.

Vancouver, Wash.—Council has adopted resolutions providing for paving of portion of East South st.; estimated cost, $11,089.

Barboursville, W. Va.—Town Council is considering paving of streets.

La Crosse, Wis.—County will improve highways.—John Hintgen, Supervisor.

Madison, Wis.—Street improvements of aggregate cost of $278,726 will be made by the city this season. According to the report of Board of Public Works, three streets will be improved with asphalt.

Chilliwack, B. C., Can.—City Road Superintendent J. B. Croly has estimated cost of proposed macadamizing at $66,000.

CONTRACTS AWARDED

Covina, Cal.—To L. H. McGowan, Higgins blvd., Los Angeles, Cal., for improving one mile of Citrus ave., $37,693; the work includes asphalt paving, macadamizing and constructing cement curbs and gutters; other bidders: B. T. Ford, Los Angeles, $41,846; Johnson-Shea Co., Los Angeles, $42,918.—Dessery & West, Union Trust Building, Los Angeles, Engineers.

Fairfield, Cal.—To W. B. Connelly, for grading and macadamizing eight blocks of Texas st.

Denver, Col.—Paving in North Side Improvement Dist. No. 14 to Municipal Constr. Co., $15,723.

Canton, Ill.—Paving around South Park, to Roller & Saville, Canton, $14,201.

Chicago, Ill.—Building sidewalks to following contractors: H. P. Larsen, 1542 N. Rockwell st.; Siewert & Callsen Co., 3865 Milwaukee ave.; Chas. Chambers & Son, 5256 S. Wood st.; Jas. Porter, 1557 E. 94th st.; Hanson-Undine Co., 2858 E. 83d st., and A. L. Strachan, 5737 E. May st.

Murphysboro, Ill.—Paving to cost $21,000, to the Meyer-Thomason Co., East St. Louis.

Paris, Ill.—Paving East Crawford st. to Allan J. Parrish, $8,574; Baum Construction Co. bid $8,743 on this work.

Hartford City, Ind.—Construction of the Burns gravel road to John F. Buckley, Harrison Township, $9,291; estimated cost of the road as determined by the viewer was $12,085.25; thoroughfare will be 2¾ miles long and will be built of macadam.

Marion, Ind.—To Ryan & Carroll, Jonesboro, for the construction of Earl Plough stone road, $3,100.

Marion, Ind.—To Ryan & Carroll, Jonesboro, for Thomas Baird road, Water st., Jonesboro, 1½ miles long and part of it of extra width, $7,435; other bidders: H. B. Sarg, $7,995; Wheat, Sisk & Rupple, $7,447; Omer Mackey, $7,947; Johnson & Crosby, $8,264; Drook & Williams, $7,924; William Yates, $8,488.

Muncie, Ind.—To John Gubbins & Co., for paving with brick of Broadway in Whitely from Whitely bridge to Centennial rd., $31,861.98.

Brookline, Mass.—Constructing coal tar concrete sidewalks, driveways, street crossings and gutters for the ensuing year, to Lowe-Armington Co., 129 Washington st., $7,010.

Fall River, Mass.—To Thos. H. Angell for building granolithic sidewalks, $1.3125 per sq. yd.

Lynn, Mass.—By Purchasing Agent Carleton for 10,000 barrels of cement, more or less, to Smith, Green Co., Boston, $1.65 per barrel, delivered in duck bags, 10c. rebate on return of bags.

Duluth, Minn.—By Board of Public Works for all wooden walks in city and the cement walks west of Twelfth avenue west to W. H. Kiltin; bid for cement walks $12,653.50; cement walks east of Twelfth ave. to D. H. Clough, $14,297; latter also got the contract for the cement walks on Park Point, $3,987.50; laying the solvay calcium chloride in eight sprinkling districts to the Board of Trade Livery Co., $18 a ton, which includes cost of the preparation; to Joe Scandin, water sprinkling contracts for districts Nos. 1, 7, 8 and 9; to Board of Trade Livery for districts Nos. 3 and 5; to William Scandin for districts Nos. 2 and 4, and to Eklund and Olin for district No. 10.

Meridian, Miss.—To Healy Construction Co., McAlister, Okla., by Good Roads Commission, to construct twenty miles of paved highways; material used to be novaculite.

Long Branch, N. J.—Graveling Branchport ave., to John H. Hines, $1.40 per yd., spread.

Jersey City, N. J.—Reconstructing and reinforcing the roadway pavt., curbs and gutter and drainage system of Hudson boule. in three sections: 1st, bet. the Newark and New York R. R. and Newark ave., Jersey City; 2d, bet. Morris Canal and McAdoo ave., Jersey City, and 3d, bet. W. 38th st. and W. 51st st., Bayonne, to Wm. Baker, 137 South st., Jersey City, 59 per cent of cost on all items; following is detail bid: 35,100 lin. ft. concrete curb and gutter, with curb guard, including excav. and allowance for bluestone curb and belgian block, per lin. ft., 59c.; 75,200 sq. yd. macadam pavt. on sides of roadway, requiring an average depth of 8 in. of stone and two applications of tar or asphalt binder, per sq. yd., 47.2c.; 34,600 sq. yd. macadam pavt. on center of roadway, requiring average depth of 12 in. of stone and two applications of tar or asphalt binder, per sq. yd., 64.9c.; 35 new receiving basins, complete, $44.25; 120 basin heads reset, $2.95, and 2125 lin. ft. 12-in. vitr. pipe sewer, including excav., per ft., 73¾c.

Paterson, N. J.—Furnishing steam road roller for county use, to Buffalo Steam Roller Co., $2,650.

Trenton, N. J.—The McGovern Construction Co., to place pavement along Stuyvesant ave. side of Cadwalader Park, 15½c., the A. A. Rose Construction Co. bid 16c., the Fell Co. 18c., Pento & Tott Co. 18½c.

Trenton, N. J.—Construction of sidewalks, curbs and gutters by City for fiscal year, to Pinto & Tott, lowest bidders.

Trenton, N. J.—Laying macadam pavement on West End ave. and building drain on Market st. to Thos. J. McGovern.

Albany, N. Y.—Supply of gravel for the bureau of parks to Henry Steers, Incorporated, New York City, $1.55 per cubic yard.

Ft. Niagara, N. Y.—To Lake Shore Constr. & Supply Co., Dunkirk, for constructing drains, roads and walks, $12,988.

New York, N. Y.—Paving, widening and curbing 23d st. to the Republic Construction Co., 18 Broadway, New York, $118,448; other bidders: Barber Asphalt Paving Co., $121,686; U. S. Wood Paving Co., $119,275; Mack Bros., $140,257.

Port Jervis, N. Y.—Paving portions of Pike, Front, Fowler, Sussex and Ball streets with Mack fireclay brick to B. M. Shanley's Sons, of Newark, N. J., $25,682, which includes excavation, brick and resetting of curb; other bidders: Murphy & Son, West Hoboken, N. J.; Mulderry Bros., Albany; Hallock & Angle, Newburgh; M. F. Dollard, Albany; J. Foley, Paterson, N. J.; W. H. Ring & Son, Paterson, N. J.; McGreevey, McGriggan & Baum Co., Elmira, and J. B. O'Rourke, Boston, Mass.

Poughkeepsie, N. Y.—Paving streets as ordered, to New Jersey Paving Corporation, $2.30 per sq. yd. for Metropolitan brick.

Rochester, N. Y.—Brick pavement on Genessee st., to Whitmore, Lauber & Vicenue, $25,041; Bloss st., asphalt pavement, Saratoga ave. to Fulton st., to Rochester Vulcanite Pavement Co., $11,763; Oak st., asphalt, Jay to Allen st., to Rochester Vulcanite Pavement Co., $20,610; Oak st., brick pavement, Jay to Lyell ave., to Whitmore, Rauber & Vicinus, $22,912.

Belle Valley, O.—Paving road in Noble Township, to Juniper & Nixon, of Nelsonville, $10,302.

Bowling Green, O.—Macadamizing Sec. 2, M. Rush Stone Road Improvement, to Gaghan & McGee, of Custar.

Cleveland, O.—Paving Lakeside ave., E. 26th st. to E. 40th st., Medina block stone, to R. P. Burnett, $50,933; Lakeside ave., E. 9th to E. 14th st., Medina block stone and creosoted wood block, to C. F. Reiley, $22,-100; W. 117th st., Lake ave. to Madison ave., 4-in. brick on 4-in. concrete foundation, to Baldwin Bros., $35,193; Overlook rd., Euclid pkway. to city limits, sheet asphalt or asphalt block, to Cleveland Trinidad Pav. Co., sheet asphalt, $9,258.

Port Washington, O.—O. W. Schwab, of Port Washington, for paving road: Grading, 40c. per cu. yd.; foundation, gravel, 70c. per cu. yd.; curb., 30c. per lin. ft.; brick, 80c. per sq. yd., and cement filler, 7c. per sq. yd.

Ravenna, O.—Improvement of the Kent Ravenna road to E. E. Morgan & H. B. Green, city, $74,981.

Toledo, O.—By County Commissioners, for furnishing crushed stone to be used for repairing the Wackerly road, to Whitehouse Stone Co., $1 ton on road; County will make repairs itself.

Hugo, Okla.—Paving nearly two miles of residence streets with road asphalt, to F. R. Stone, Lima, O.

Pittsburg, Pa.—To Pittsburg Amacite Company, for furnishing amacite to be delivered on Imperial and Clinton, the Dairy Farm and Glenfield extension roads; to the Standard Bitulithic Company for delivery of amacite on Washington pike, Mount Lebanon and extension road, the Monongahela City and Elizabeth road, and the Butler pike, both at prices regulated according to length of haul; to Pittsburg Bituminous Engineering Company, for furnishing 15,000 tons of lake gravel and screenings, $1.75 a ton, delivered by Pennsylvania Railroad, and at $1.50 a ton, delivered by Pittsburg & Lake Erie Railroad; to the C. P. Mayer Brick Company, for 486,000 brick to be delivered on Mt. Lebanon road, at $14.45 per M.; and for 592,000 brick blocks to be delivered on the Brownsville road, $14.45 per M.

South Sharon, Pa.—Sidewalking and curbing during year, to M. Davis.

Youngwood, Pa.—Paving with vitrified block on Third, Fourth and Depot sts., to James Nixon Clairton, $43,536.40.—Warren Mitchell, Youngwood, Borough Engineer.

Dallas, Tex.—Paving Forest ave., Central to Arza, to Texas Bitulithic Co., at $2.30 per sq. yd., total cost, $65,018.20. Other bidders: Creosoted Wood Block Paving Co., $74,303.55 for 3-in. blocks; $81,-458.75 for 3½-in., and $88,618.45 for 4-in.; to Creosoted Wood Block Paving Co., at $2.59 per sq. yd., for paving Grand ave., Ervay to Fair Park; total cost, $70,960.84. Other bidders: John C. Underwood, asphalt macadam, $41,810.92; brick, $96,362; Texas Bitulithic Co., $62,504.24. Paving Worth st., from Pacific ave. to Texas Bitulithic Co., $2.30 per sq. yd.; total cost, $55,088.40. Other bidders: Municipal Paving Co., $55,-211.15 for rock asphalt, $67,594.68 for brick, $72,619.31 for 3½-in. pine blocks, $76,971.35 for 4-in. pine blocks; Creosoted Wood Block Paving Co., $61,283.40 for 3-in. wooden blocks, $66,671.84 for 3½-in. and $72,059.88 for 4-in.; to Texas Bitulithic Co., for paving Boulevard from Central to Oakland, from Jeffries to Arza, and from Jeffries to Oakland; for section from Jeffries to Oakland, to cost $7,429.20, the city will pay its part, $3,127.85; other sections will be paid for by the property owners; Texas Bitulithic Co. was awarded paving Arza st., Grand ave. to Forest, $2.30 per sq. yd.; amount will be about $10,000.

Dallas, Tex.—To Texas Bitulithic Co., for paving South Boulevard, $2.30 per sq. yd. for bitulithic paving on concrete foundation; total cost, $3,567.50; to same company, for paving First ave., Parry to Santa Fe sts., $4,570.97; Bryan st., to Creosoted Wood Block Paving Co., $2.59 per sq. yd.; total cost, $74,017.30.

Dallas, Tex.—Laying about 2,000 ft. of combination curb and gutter on Zang's Boulevard and for 1,420 ft. of straight curb, to Lone Star Construction Company, 40c. and 25c., respectively; 3,200 ft. straight curb on Park Row, to Rock Island Grantitoid Company at 32c.

Portsmouth, Va.—Paving South st., to E. Park Lindsay, $14,260.70.

SEWERAGE

Mobile, Ala.—Board of Public Works has accepted plans submitted by City Engineer Wright Smith for improvement of sewerage and drainage systems at cost of about $600,000.

Pulaski Heights, Ark.—Council is considering construction of sewerage system giving drainage into the Arkansas River below pumping station.

Oakland, Cal.—City Engineer Turner has recommended construction of two storm sewers at cost of $15,400; also division of branch of Elmhurst Creek at Foothill blvd., $20,000.

Plainville, Conn.—Sanitary and Sewer District has voted to have plans prepared for construction of sewer.

Stonington, Conn.—Preliminary surveys and plans are being made by Daboll & Crandall, New London, for installation of proposed new sewer system.

Ridgely, Del.—Citizens will vote April 24 on bonds to install sewerage system.

Summerville, Ga.—Citizens have voted $75,000 bonds for sewer, street and water improvements.

Thomaston, Ga.—Citizens will vote May 1 on $45,000 bonds for construction of sewerage system and water works.

Waycross, Ga.—Council has asked bids for extension of sewer mains at cost of $15,000.

Westfield, Ill.—Plans and specifications are being prepared for sewerage and water works system for village; will be ready about May 15.—W. R. Paige, 101-2 Rose Dispensary Bldg., Terre Haute, Ind., Consulting Engineer.

Mt. Vernon, Ind.—Bids will be asked about May 1 for a storm sewer; cost about $5,000.—G. W. Sarlls, City Engineer.

Newcastle, Ind.—Council will advertise for bids for the converting into a large, arched sewer of the open stream running through the center of the city, known as the Bowery Brook; will cost not less than $50,000.

Nevada, Ia.—Engineer S. Steigerwalt will make survey and estimate cost of extending outlet and disposal plant of proposed sewer.

Seymour, Ia.—Council has decided to construct sewer in Dists. Nos. 1 and 2.

Bowling Green, Ky.—Council has adopted resolution requesting State Sanitary Engineer Paul Hansen to submit proposed plan for inaugurating a system of sewerage for city, and also for plan for improvement of filtration plant of water works.

Fitchburg, Mass.—Work will be started about June 1 on construction of trunk sewer along bed of Nashua River; Engineer Hartwell is working on plans; Daniel A. Boyle is member of Sewer Commission.

Spencer, Mass.—Town has appropriated $1,100 for sewage disposal.

Taunton, Mass.—Board of Sewer Commission has advised $15,000 loan for sewer work during year.

Wellesley, Mass.—Town has named committee to procure plans for underground sewerage system.

Ely, Minn.—Citizens have voted $30,000 bonds to extend sewer system and provide for water supply distribution.

Gilbert, Minn.—Plans by Engineer Frank Bowman have been approved for proposed sewer system; $32,000 available; work will begin at once.

Union, Mo.—L. C. Allersmeyer, elected Mayor, favors installation of sewer system.

Ocean City, N. J.—Citizens will vote, May 9, on $75,000 bonds for bettering system of drainage.

Trenton, N. J.—Council has decided to construct sewers in portions of Rose st. and Greenwood ave.—Harry B. Salter, City Clerk.

Far Rockaway, L. I., N. Y.—Queens Boro Council is considering construction of system of sewer mains in Wave Crest section of Far Rockaway; estimated cost, $24,850.

South Glens Falls, N. Y.—Citizens have voted $40,000 bonds for construction of a sewer system. W. H. Reynolds, Engineer.

Syracuse, N. Y.—Council has adopted ordinance approving plans for 15-in. pipe sewer in Cleveland and Craig sts. at cost of $1900.

Cincinnati, O.—Council has passed ordinance authorizing $2,000 bonds for sewering Amthauer st.

Tulsa, Okla.—City Engineer T. C. Hughes has about prepared plans for construction of $35,000 sanitary sewer systems.

Crafton, Pa.—Council has decided to install complete sewerage system in Crafton Terrace at cost of $18,000.

Cumberland, R. I.—Citizens will consider installation of sewer system.

Huron, S. D.—Bids have been rejected for proposed sewer extensions.

Clarksville, Tex.—City is considering installation of modern sewerage system.

Richmond, Va.—On recommendation of Committee on Streets, Council has ordered construction of following important sewers: Lehigh st., from 9th to 11th, with connections, to cost $18,800; sewer in Bloody Run ravine, from 31st and Grace sts., to cost $12,430, and deep sewer in north side of Broad st., 9th to 3d and from 2d to Adams, to cost $16,000.

Seattle, Wash.—Board of Public Works has adopted plans and specifications for sewers on 25th ave., North and 11th. aves. W.

Barboursville, W. Va.—Town Council is considering construction of sewer system.

Huntington, W. Va.—Board of Commissioners has ordered construction of lateral sewers in portions of four streets.

Niagara Falls, Ont., Can.—Plans prepared by City Engineer Paul Gardiner for the conversion of Muddy Run to trunk sewer have been presented to the Board of Aldermen.

CONTRACTS AWARDED

Ft. Morgan, Col.—Constructing pipe sewers, to Meekeer & Dobson, McCook, Neb., $5,146.

Putnam, Conn.—Construction of sewers, including approximately 600 ft. of 24-in. pipe, 300 ft. of 20-in. pipe, 1,080 ft. of 15-in. pipe, 600 ft. of 12-in. pipe, 1,700 ft. of 10-in. pipe, and 7,900 ft. of 8-in. pipe, to F. H. Gammino, $9,916; other bidders: Perossi Co., $11,574; W. J. McCarty Co., $13,067; H. M. Cussack Co., $12,039; L. A. Taylor, $16,-046; M. J. O'Hearn, $15,473; L. Yadisernia & Co., $14,930; Pierson Engineering & Construction Co., $11,384; E. B. Rohertz, $10,-813; Sylvester & Quinn, $1,202; W. B. Bryne, $13,866; C. H. Slucomb, $10,811; George Phillips, $15,817; Connecticut Construction Co., $11,815; R. F. Whipple & Co., $12,791; F. Williams, $11,115; Iniffi & White, $13,205; Eudine Bros., $94,138; F. H. Gilbert, $12,788; L. Perillo & J. Covring, $20,221; Lopardo & Way, $19,855; Field, Barker & Underwood, $11,275; A. Vito Construction Co., $12,179; H. F. Redden Construction Co., $12,757; F. A. Davis, $13,182; C. E. Trumbull Co., $11,120; Thomas Burns, $14,885; George M. Bryne, $13,352; Frank H. Cowan, $11,853; J. B. O'Rourke, $12,085; Argeto Construction Co., $16,883, and Henry Spinach, $13,425.

Stamford, Conn.—Construction of the West Side sewer, to Frank Palmer, Stamford, $45,543.

Marion, Ind.—Building extension Stevenson st. sewer, to Dillard Artes, $1.15 per lin. ft.

Indianola, Ia.—Building sewer to Lydle Construction Co., Sioux City, as follows: 519 ft. 12-in. vitrified sewer pipe, $1; $7,881 ft. 10-in., $1; 12,176 ft. 8-in., 75c.; 3,204 ft. 6-in., 60c.; c.i. 12-in. pipe, $1.75 per ft.; 10-in., $1.25; valves, 12-in., $22; 10-in., $18.50; concrete reinforced in retaining walls, $10.50; in settling tank, $12; 41 common manholes, $35 each; 8 drop manholes, $45 each., and 5 flush tanks $100 each.—A. H. Gilleland, City Engineer.

Newport, Ky.—Construction of sewers, to McClane & Sons, as follows: Putnam st., $878.46; 3d st., between Isabella and Central ave, $750.15; German st., between 9th and 10th sts., $1,062.35, and German st., between 10th and 11th sts., $822.90.

North Platte, Neb.—Constructing sewers in Sewer Dists. G3 and G4, P and F, to C. R. McKay, 528 Paxton Blk., Omaha, about $6,000.

Niagara Falls, N. Y.—Building sewer in North ave., to Wm. Ruffran, $7,994.

Yonkers, N. Y.—To O'Rourke Constr. Co., for constructing sewer in Alexander st., between Ashburton and Wells aves., $4,094; other bidders: McDonald & Murray, $4,658; Nicholas Mangini, $5,075; Joseph Cozzo, $4,743.15; Thomas Grady, $4,750; Frank Cianfaglione, $4,850.

Minot, N. D.—Building North Side sewer system, to G. W. Kemper, city, $29,925.82; other bidders: Illstrup & Olson, Minneapolis, $31,854.00; G. W. Haggert, St. Paul, $31,-326.57; C. H. Porritt, Fargo, $31,549.78; Magee Johnson, Minneapolis, $31,986.07.

Chester, Pa.—Constructing spurs and sewers, to Pritchard & Oliver; 8-in. terra cotta pipe, $1.42; 12-in., $1.45; 15-in., $1.55; 18-in., $1.70; rock, $4.75; manholes, $39.50; other bidders: E. H. Butler, 8-in. $1.67, 10-in., $1.72, 12-in. $1.77, 15-in. $1.84, 18-in. $1.96, rock $5, manholes $39; J. & J. Hanna, 8-in. $1.45, 10-in. $1.48, 12-in. $1.52, 15-in. $1.57, 18-in. $1.70, rock $4.75, manholes $40; W. E. Reilley, 8-in. $1.59, 10-in. $1.59, 12-in. $1.65, 15-in. $1.65, 18in. $2.25, rock $4.25 cu. yard, manholes $37. Sewer on Central ave., Seventh to Twelfth st., to Pritchard & Oliver, 96c. per ft.; Y branches, 45c. each, manholes $39.50, rock $4.50 cu. yd.; other bidders: John Hanna Sons, 8-in. terra cotta pipe, 98c. per ft., Y branches 45c. each, manholes $40, rock $4.75 cu. yd.; E. H. Butler, 99c. per ft., Y branches 44c. each, manholes $36, rock $5 cu. yd.; Seventh st., Highland ave. to Wilson st., to John Hanna's Sons, 94c. per ft., branches 45c. each, manholes $40, rock $4.75; other bidders: E. H. Butler, 8-in. terra cotta

pipe 97c., branches 44c. each, manholes $36, rock 45 cu. yd. W. E. Reilley, $1 per ft., branches 50c. each, manholes $36, place tanks $100, rock $4; Pritchard & Oliver, 96c. ft., branches 45c. each, manholes $39.50, rock $4.50 cu. yd.

Valley Camp, Pa.—Building sewage disposal plant, to Pitt Construction Co., Pittsburg.—Chester & Fleming, Union Bank Bldg., Pittsburg, Engineers.

WATER SUPPLY

Ashville, Ala.—Town is considering construction of water works.

Bisbee, Ariz.—City Trustees will shortly award contract for drilling wells and constructing pumping plant; considerable canal work will also be constructed.—Harry E. Blake, Los Angeles, Cal., Surveyor.

San Francisco, Cal.—City Engineer Marsden Manson has prepared plans for building two sections of intake tunnel for Townsend st. pumping station.

Orlando, Fla.—Orlando Water & Light Company contemplates the installation of a 2,000,000-gallon per day Underwriters pump.

Flowery Branch, Ga.—Installation of water works is being considered; estimated cost, about $6,000.—C. R. Parson, Mayor.

Summerville, Ga.—Citizens have voted $75,000 bonds for water, street and sewer improvements.

Thomaston, Ga.—Citizens will vote May 1 on $45,000 bonds for construction of water works and sewerage system.

Mountain Home, Ida.—Citizens have voted $35,000 bonds for constructing city water system; E. M. Blake, Boise, has made preliminary survey.

Rockdale, Ill.—Village has decided to install municipal water plant and lay mains in all streets.

Westfield, Ill.—Plans and specifications are being prepared for water works and sewerage system for village; will be ready about May 1.—W. R. Paige, 101-2 Rose Dispensary Bldg., Terre Haute, Ind., Consulting Engineer.

Gilmore City, Ia.—Citizens will vote on installation of waterworks.

Nevada, Ia.—Installing water works system, to Guy E. Smith, Indianola.

Burden, Kan.—Rolling & Westover, Consulting Engineers, Beals Bldg., Kansas City, Mo., are preparing plans for installation of system of water works; estimated cost $15,000.

Horton, Kan.—Town has voted $55.000 bonds to purchase water and light plant.

Bowling Green, Ky.—Council has requested State Sanitary Engineer Paul Hansen to submit plan for improvement of filtration plant at water works.

Baltimore, Md.—Council has authorized Water Board to lay pipes and supply water in Baltimore County.

Cumberland, Md.—Citizens will vote May 16 on $500,000 of bonds for new water supply; plans by Engineer J. H. Fuertes, New York, call for gravity supply from Evitts Creek, about nine miles from city; water is to be filtered in open reservoir; daily supply, 6,000,000 gallons.

Athol, Mass.—Town is planning the construction of water works system; James L. Tighe, Holyoke, has been selected as engineer.

Cambridge, Mass.—Mayor J. Edward Barry has recommended increased water supply.

Uxbridge, Mass.—Bids will be received about April 15 for laying water mains; estimated cost, $8,000.—W. E. Rawson, Superintendent Water Works.

Benton Harbor, Mich.—Citizens have defeated proposition to issue $100,000 bonds for improvement of water works.

Big Rapids, Mich.—Citizens have defeated proposition to expend $20,000 for repair of water works.

Ely, Minn.—Citizens have voted $30,000 bonds to provide for water supply distribution and to extend sewer system.

North Mankato, Minn.—Citizens have voted $20,000 bonds for construction of water works system.

Wasesea, Minn.—Citizens have voted $15,000 bonds for water works extension.

Bassfield, Miss.—Citizens have voted bonds to install water works system.

Seminary, Miss.—Citizens have voted $10,000 bonds for installation of water works system and erection of school.

Fallon, Nev.—Construction of water works, a sewer system and electric light plant is being considered.—M. L. Wildes, Mayor.

Rahway, N. J.—Consulting Engineer Chas. A. Hague, New York, has recommended installation of cross-compound, high duty, crank and fly wheel pumping engine.

Cortland, N. Y.—Water Board will soon ask for bids for construction of proposed new water tank, capacity 1.000,000 gals.—D. B. Coleman, City Engineer.

Geneva, N. Y.—City is considering the improvement of water works system; estimated cost $125,000.—C. T. Church, City Engineer.

Rockville Centre, L. I., N. Y.—Village has voted $7,500 for improvement of water system and roads.

Waterbury, L. I., N. Y.—New bids will be asked for furnishing engines for water plant.

Andrews, N. C.—Ctiy is considering $20,000 bond issue for water works, electric lights and street improvements.

Red Springs, N. C.—Bids will be received April 27 for $35,000 water works and sewerage bonds.—A. B. Pearsall, Chairman Board Public Works.

Cincinnati, O.—Council has passed ordinance authorizing $100,000 bond issue for water works improvement.

Logan, O.—Village is preparing to construct system of water works.—H. S. Vance, Village Engr.

Mansfield, O.—Anton Burchard, Cleveland, is preparing plans for water works pumping station to be constructed at Hedges Springs; cost, about $18,000.

Urbana, O.—City has sold $100,000 water works bonds to install plant.

Boswell, Okla.—Citizens have voted $35,000 bonds for installation of water works and electric light plant.

McAlester, Okla.—Citizens will vote April 22 on $80,000 bonds for extensions of water system.

Waynoka, Okla.—Citizens have voted $27,000 bonds for construction of water works.

Carlton, Ore.—City has employed engineers who are now surveying a pipe line to tap Panther Creek, nine miles west, and will furnish water for all purposes; it is proposed to construct reservoir on what is known as Wennerberg's Hill.

Klamath Falls, Ore.—Mayor Sanderson has vetoed the water, light and power franchises passed by Council in favor of the Klamath Falls Light & Power Co.

Pottstown, Pa.—Pottstown Water Co. will lay larger mains in several portions of town.

South Sharon, Pa.—Council is considering installation of water plant; cost, about $160,000.

Springdale, Pa.—Citizens have voted $50,000 bonds for water works, $12.000 toward constructing sewers and $10,000 for grading streets and alleys.

Dillon, S. C.—Installation of $80,000 water works is being considered.

Clarksville, Tex.—Citizens will vote on $10,000 bonds to extend water mains.

Norfolk, Va.—Council is considering securing of larger water supply.

Kelso, Wash.—Council has granted water and light franchises to Washington-Oregon Corporation.

Racine, Wis.—Citizens have voted to purchase water works.

CONTRACTS AWARDED

Kingsburg, Cal.—To Braum, Williams & Russell, of Redondo Beach, for construction of a municipal water works from plans of Olmstead & Gillelen, Wright & Callender Bldg., Los Angeles, $25,000.

Suisun, Cal.—To W. B. Connelly, for the work of raising dam of storage reservoir of municipal water system eight feet, which will increase capacity of the reservoir about twelve million gallons, $1,940.

Terra Bella, Cal.—To Western Eng. & Water Supply Co., Oakland, for water and sewer system, $6,034.

Jacksonville, Fla.—To the Reinforced Concrete Culvert Pipe Co., city, to furnish all the reinforced concrete pipe for Hollowman st. and Highway ave. storm sewers.—F. W. Long & Co., Jacksonville, General Contractors; R. N. Ellis, City Superintendent.

Wheaton, Ill.—Water works improvements from plans of Jos. B. Rider, 112 N. La Salle st., Chicago: 60-hp gas engine and gas producer, to National Meter Co., of Chicago and New York, N. Y.; 2 centrifugal pumps, to American Well Works, Aurora; 100.000-gal. concrete reservoir, to Eugene Stark, of Wheaton, and excavation work, to J. C. Wheaton, Wheaton.

Herington, Kan.—To J. W. Kelso for increasing water supply, about $8,000.

Boston, Mass.—Relaying water pipe in Clayton, Park and Hancock sts., Dorchester, to Michael Desesto, $1,456.

Easthampton, Mass.—Furnishing pipe, to R. D. Wood & Co., Philadelphia, Pa., $22.12 per ton; about 4½ miles of 8 and 6-in. pipe will be required for the extensions in East and Main sts. and to the Town Farm.

Detroit, Mich.—Furnishing 300 tons special water works castings, to American Car & Fdry. Co., $2.15 per cwt.

Lewiston, Mont.—Furnishing approximately 50,000 ft. of c.-i. pipe of 130-lb. pressure; also fire hydrants, valves, lead, jute and other materials: c.-i. pipe and specials, to U. S. C. I. Pipe & Fdry. Co., Chicago, Ill., for about $50,000; valves and hydrants, to J. B. Clow & Sons, Chicago, Ill., for about $5,500, and lead and jute, to Montana Hardware Co., Lewiston, $3,000.—O. F. Wasmansdorff, Consulting Engineer.

Cape May, N. J.—Erecting steel stack at water works, to Jos. H. Hanes.

Ventura City, N. J.—Duplicating present water and sewer plant, to Jos. L. Sweigart, $9,940.38.

Westbury, L. I., N. Y.—Building water plant: Pipe laying, to J. C. Tierney, 1317 Park ave., Hoboken, N. J.; valves and boxes, to the Fairbanks Co., 416-22 Broome st., New York City; hydrants, to Eddy Valve Co., Waterford, N. Y.; pipe and specials, to Standard Cast Iron Pipe and Foundry Co., Bristol, Pa.; tank and tower, to S. D. Cole Mfg. Co., Newman, Ga.; foundations, pump, station and setting pumps, to F. Powers, Westbury; pumps, to Platt Iron Works Co., 94 Liberty st., New York City; wells, to Thos. B. Harper Est., Jenkintown, Pa.; engines, will advertise for new bids.

Zanesville, O.—To J. B. Clow & Sons, 350 Franklin st., Chicago, Ill., for furnishing water pipe and special castings, to the Water Department; cost about $5,000.

Checotah, Okla.—Complete installation of water works pump station, 7,600 ft. of 8-in. iron pipe, two double-acting triplex pumps, pole and wire line, etc., to C. R. Nichols, City, about $13,160.

Akron, Pa.—Building water plant, to O. E. Christ, Ephrate, bids opened April 4; borough, however, will buy engine and pumping machinery and have same placed.

Reading, Pa.—Furnishing water gates, to the Darling Pump & Manufacturing Co., of $516 each; fire hydrants, to Florence Iron Works, Florence, N. J., $25.25 each.

Nashville, Tenn.—To J. H. Fall & Co., supply of castings for water works department, $49 per ton.

Prescott, Wis.—Construction of a gravity water system, to Des Moines Bridge and Iron Co., Des Moines, Ia., $19,419; other bidders: L. W. Schruth, Fargo, N. D., $20,700; Pastoret-Lawrence Co., Duluth, Minn., $21,770; Fraser & Danforth, Rochester, Minn., $22,900; W. D. Lovell, Minneapolis, Minn, $19,700; J. P. Nolan, South St. Paul, Minn., $23,335; J. G. Robertson, St. Paul, Minn., $21,933.

Souris, Man., Can.—To M. S. Holmes, Portage la Prairie, Man., for laying water mains, $39,000; to Kitchen Bros., Souris, for power house, $3,200.

Toronto, Ont., Can.—To the Canada Foundry Co. for 20-in. c.-i. water piping, $39.95 per 12-ft. length.

Vancouver, B. C., Can.—To Evans, Coleman & Evans, for eighty tons of pig lead at $3.70 per 100 lb.; to same, for supplying steel pipe for water mains, $43,217.85; to Robertson & Godson, for supplying valves, $5,062.65; to Crane & Co., for supply of eighty Ludlow hydrants, at total price of $3,333.67.

LIGHTING AND POWER

Lodi, Cal.—Western States Gas and Electric Co. has purchased site on Cherokee lane for new substation and transformer house for distribution of power in this part of the county.

Willow, Cal.—Peoples Power Co. has been formed for manufacture and distribution of gas.—C. R. Wickes, A. S. Lindstrom, A. H. Quatman, J. W. Smith and E. T. Stern, Directors.

Fairburn, Ga.—City has issued $10,000 of bonds for construction of electric light plant.

Richmond, Ind.—About $6,000 will be spent for new stokers at municipal light plant within short time.

Manilla, Ia.—Citizens will vote April 14 on granting of franchise for installation of electric light plant.

Webster City, Ia.—Bids were received for furnishing equipment and material for improvements to municipal electric light and water works system.

Greensburg, Kan.—Citizens have voted $15,000 bonds for municipal electric light plant.

Kansas City, Kan.—City will begin at once the construction of municipal lighting plant; issue of $350,000 bonds has been authorized.

Horton, Kan.—Town has voted $55,000 bonds to purchase light and water plant.

Escanaba, Mich.—Citizens have voted $30,000 bonds for construction of municipal electric light plant.

Proctor, Minn.—Proctor Water and Light Co. has been granted franchise to install water works plant.

Tower, Minn.—Citizens have voted $16,000 bonds for construction of water plant at Pike River Falls.

Bolton, Miss.—Power house, containing all the electric light plant and water works machinery, has been destroyed by fire.

Hastings, Neb.—Citizens have voted $120,000 bonds for municipal lighting plant.

Burlington, N. J.—Citizens will vote April 18 on installation of electric light plant.

Andrews, N. C.—City is considering $20,000 bond issue for electric lights, water works and street improvements.

Faith, N. D.—Faith Light and Power Co. has been granted franchise to install plant.

Glen Ellen, N. D.—Installation of electric light plant is being considered.

Dayton, O.—Bids have been rejected for lighting boulevard system.

Boswell, Okla.—Citizens have voted $35,000 bonds for the installation of electric light plant and water works.

Springfield, Ore.—Council has granted franchise to Oregon Power Co.; reducing plant will be established; 4-in. main will be laid to the Eugene gas plant, distance of four miles.

Denver, Pa.—Council has passed ordinance giving D. S. Martin the right to operate electric system.

Royersford, Pa.—Council is considering feasability of a municipal electric plant.

Temple, Tex.—I. A. Walker, Dallas, has made application to Council for franchise for installation here of a gas plant and distributing system.

Temple, Tex.—Col. P. L. Downs has about completed arrangements for installation of $100,000 gas plant.

Wichita Falls, Tex.—M. A. Marcus and T. E. Dobson have been granted franchise by Council to install electric light plant; they will organize company.

Clarendon, Va.—Arlington Electric Co. has been chartered to furnish electricity to Ballston, Falls Church and Clarendon.—L. L. Northrop, Secretary.

Chehalis, Wash.—By passing franchise granting Twin City Light & Traction Company lease to operate electric lighting plant in this city for next 50 years, Council has secured building at once of $75,000 power house.

Kelso, Wash.—Council has granted light and water franchises to Washington-Oregon Corporation.

Brooklyn, Wis.—Citizens will vote on bonds to install electric light and power plant.

Eau Claire, Wis.—Articles of incorporation have been filed by Minnesota-Wisconsin Power Co., capital stock $100,000, organized to sell light and power from water plant at Eau Claire to towns and villages along river north of Winona.

Somerset, Wis.—Plant of St. Croix Power Co. at Apple River Falls has been destroyed by fire and will be rebuilt at once; St. Paul Gas & Light Co., owner.

Hamilton, Ont., Can.—Board of Control has selected E. I. Sifton, of London, Ont., to prepare plans and estimates for the installation of a municipal electric light plant and street lighting system.

CONTRACTS AWARDED

Escondido, Cal.—To Escondido Utilities Co. for lighting streets of city for a term of five years; contract calls for the installation of 50 lamps.

Jacksonville, Fla.—Furnishing 30-ton electric crane to Niles-Bement-Pond Co., Philadelphia, $4,960; four new boilers, rebuilding of four boilers and removal of old ones to Babcock & Wilcox Company, New York City, $39,384; three condensers for service equipment, complete, and replacing the auxiliaries of two other equipments to C. H. Wheeler Manufacturing Company, Philadelphia, $40,400; one feed water heater to Warren Webster & Co., Camden, N. J., $1,850, two boiler feed pumps, four duplex service pumps and two duplex piston oil pumps and necessary solid brass plungers to Warren Steam Pump Company, Warren, Mass., $4,578; two 1,500-kilowatt turbo-generators and two 100-kilowatt turbo exciters to General Electric Company, Schenectady, $54,650.

Auburn, N. Y.—Lighting city for ten years, to Auburn Light, Heat & Power Co.; about 35 ornamental lamps, $91.75.

Darby, Pa.—Councils have made contract with Delaware County Electric Co. to light borough for a period of five years; arc lights of approximately 2,000-candle power are to be used on Main st.

Scranton, Pa.—By the Scranton Electric Company for laying steam mains on Washington Ave.: Gaynor Contracting Company, digging trenches; pipe contract to the American District Steam Company, Lockport, N. Y.

Sharon, Pa.—Having in contemplation erection of a municipal lighting plant. Council has signed contract with the Shenango Valley Electric Light Co. for only one year at $72 per lamp.

Sherbrooke, Que., Can.—Erecting municipal lighting plant, to Canadian Westinghouse Co., $40,000.

FIRE EQUIPMENT

Birmingham, Ala.—Board of Fire Underwriters has recommended that plain hose wagon now in reserve be equipped with 1,200 ft. of 3-in. hose; establishment of flying squadrons at two stations, each to be provided with auto combination hose wagon; also minor equipment.

Montgomery, Ala.—Bids have been rejected for house in South Montgomery; city will let contract for work.

Lodi, Cal.—Trustees have instructed Fire Chief H. E. Welch to purchase two hose wagons and harness.

Los Angeles, Cal.—Fire commission has asked appropriation to purchase six new ladder trucks, six auto pumping engines and six chasses for hose wagons, also 150 new fire alarm boxes to cost $12,000, 150 police boxes $12,000, central office equipment $22,500, extra lead covered cables $33,315, extra wire $16,690, and red lights for police department $5,000.

Stockton, Cal.—Fire Department has asked appropriation for purchase of several auto engines.

Hartford, Conn.—Citizens have voted $65,000 appropriation for erection of engine house for No. 3 and erection of water tower on Market st.

Washington, D. C.—American consul in Canada states that one of town councils in his district has adopted resolution authorizing purchase of outfit for hook and ladder company and of 500 ft. of hose. Address 6488, Bureau of Manufactures.

Statesboro, Ga.—City will erect fire department building with stable in rear.

Waycross, Ga.—Council will ask for bids for furnishing auto combination hose and chemical wagon.

Moline, Ill.—Council has rejected all bids for purchase of auto fire truck.

Odebolt, Ia.—City has decided to erect fire station.

Waterloo, Ia.—Fire Chief A. A. Dunham has recommended need of motor apparatus and purchase of fire helmets.

Middleboro, Ky.—City will erect $75,000 combined fire department, jail and city hall building.

New Braintree, Mass.—Town will soon purchase some fire appliances.

Palmer, Mass.—Town will enlarge station for new auto truck.

Springfield, Mo.—Fire Chief Samuel Hunter has recommended purchase of four pieces of auto apparatus.

St. Louis, Mo.—City will erect fire house at Clayton and Central aves. automobile engine will be installed.

Snyder, Neb.—Fire company has been organized.—H. G. Meyer, President.

Red Bank, N. J.—Council is considering erection of brick fire house for Relief Hose Co. on Pearl st.

Succasunna, N. J.—Purchase of chemical engine is being considered.—E. C. Harvey can be addressed.

Niagara Falls, N. Y.—Board of Public Works has approved of proposition of Fire Commissioners to erect two new fire halls and purchase new apparatus at estimated cost of $42,500.

Syracuse, N. Y.—Board of Contract and Supply has decided to ask for furnishing 85-ft. extension ladder and exercising wagon for Fire Department.

Cincinnati, O.—Architect Harry Hake will prepare plans and supervise erection of $22,000 engine house at Eastern Ave. for Company No. 11.

Carbondale, Pa.—Mayor A. L. Sahm has recommended need of chemical and ladder service in fire department.

Lansdale, Pa.—Purchase of $2,000 steam fire engine is being considered.—John F. Lane is interested.

Nesquehoning, Pa.—Town will soon have $5,000 hose house.

Norristown, Pa.—Montgomery Fire Co. has decided to purchase auto fire apparatus.

Sellersville, Pa.—Council is considering petition of citizens for suitable fire apparatus.

Williamsport, Pa.—Fire Chief Frank E. Stryker has again recommended need of new apparatus.

Baltic, S. D.—City has decided to erect fire station and city hall.

Fairmont, W. Va.—Fire Chief Reed has recommended purchase of fire engine and erection of fire station in Fourth Ward.

Wheeling, W. Va.—Residents of Mozart Hill are urging installation of chemical engine.

CONTRACTS AWARDED

Rochester, N. Y.—Furnishing 10,600 ft. of cable for fire alarm telegraph system, to Standard Underground Cable Co., New York, $1,350.

Georgetown, S. C.—Construction of a fire engine house, to Weston & Brooker, Columbia, $9,021.

Nashville, Tenn.—By Board of Public Works, to the Gamewell Fire Alarm Box Co., New York, eight fire alarm boxes, $1,000; to Seagraves Co., one hose wagon, $750.

Dallas, Tex.—Furnishing 2,000 ft. of rubber hose, to Eureka Fire Hose Co., New York City.

Ashand, Va.—Council has decided to purchase Howe gasoline fire engine manufactured by Howe Engine Co., Indianapolis, Ind., $1,750.

BRIDGES

Oakland, Cal.—City Engineer Furness has estimated cost of placing culverts across Thirtieth Ave. and at Thirty-first Ave. at $7,100; also recommended erection of culvert to carry Sausal Creek along Fruitvale Ave. from Central Pacific tracks to Tidal Canal, $60,000; culvert in Fortieth Ave., $12,000, and culvert across Fleitner Ave., $500.

Pasadena, Cal.—Plans for proposed West Colorado st. bridge, containing patented inventions of W. M. Thomas and designed under Thomas system by Thomas & Vert, Engineers, have been received by Mayor Early.

Brooksville, Fla.—Town will vote April 25 on $2,000 of bonds for bridge construction.—W. A. Thaxton, Town Clerk.

Tampa, Fla.—Board of Public Works is considering erection of permanent bridge over Hillsborough River.

Brownlee, Ida.—Appropriation of $10,000 is available for construction of Snake River bridge.

Chicago, Ill.—Citizens have authorized $6,430,000 bond issue for bridges and parks.

Rising Sun, Ind.—County Commisioners have adopted plans for a bridge across Island branch.

Topeka, Kan.—County Commissioners are planning to erect $7,000 bridge at Valeveia and $30,000 bridge at Grantville.

Covington, Ky.—Bids will be asked for rebuilding Robbins st. bridge.

Littleton, Me.—Town has appropriated $800 for new bridge.—B. R. Tingley, Town Clerk.

Whitinsville, Mass.—Town has appropriated $5,500 for small bridges and roads.

Lansing, Mich.—Citizens have voted to build modern $85,000 bridge at Johnson st.

Fulton, N. Y.—Plans have been completed for erection of proposed $170,000 bridge. Address City Engineer Hackett.

Lorain, O.—County Commissioners are considering construction of high lever bridge at 31st st.; estimated cost $40,000.

Springfield, Tenn.—County Court has appriated $4,250 for building bridge at Beutne's Ford.

Logan, Utah.—County will vote May 6 on $150,000 bonds for building bridges and roads.

Richmond, Va.—Council Committee on Streets has recommended adoption of design B, submitted by I. J. Smith & Co., for erection of reinforced concrete arch bridge over James River, to replace Mayo's bridge.

Hudson, Wis.—Citizens have voted $20,000 bonds to build wagon bridge across Lake St. Croix.

Marinette, Wis.—Citizens have voted $50,000 bonds to build bridge over Menominee River.

CONTRACTS AWARDED

Birmingham, Ala.—Building bridge over Elyton branch to A. C. Brooks, $1,372.50.

Champaign, Ill.—Constructing 70-ft. bridge, to J. M. Breese, Mattoon, $14,000.

Waterloo, Ia.—Erecting 2-span concrete bridge, to Miller & Rey, approximately $12,000.

Pomfret, N. Y.—Erecting concrete bridge at Laona, to Holleran Bros., Elmira, $2,752.

Reading, Pa.—Construction of three concrete bridges in the county: Mohnton Bridge No. 1, crossing the Wyomissing Creek in Mohnton, to Carl R. Camp, Montrose, $5,461; Bordner's Bridge No. 1, located in Jefferson and North Heidelberg Townships and crossing the Tulpehocken, to Willauer & Co., of Pottstown, $7,399; Bordner's Bridge No. 2, located in Bethel and Tulpehocken Townships and crossing the Swatara, to Nelson, Meredyth & Co., of Chambersburg, $6,560; other bidders were as follows: Mohnton Bridge No. 1, Nelson, Meredyth & Co., Chambersburg, $5,475; L. H. Focht & Co., Birdsboro, $8,532.50; Ferro-Concrete Co., Harrisburg, $6,053; Daniel Wanner, Reading, $5,870; Willauer & Co., Pottstown, $5,521.68; Bordner's Bridge No. 1, Nelson, Meredyth & Co., $8,617; Ferro-Concrete Co., $7,457; Bordner's Bridge No. 1, Ferro-Concrete Co., $7,269; Willauer & Co., $6,897.

Richmond, Va.—Construction of 12 modern bridges in Southampton County, total about $21,000, to Virginia Bridge and Iron Co., Roanoke.

Los Angeles, Cal.—Board of Park Commissioners will ask for $354,800 appropriation; $30,000 is for new conservatory and $15,000 for reconstruction work in East lake Park; $30,000 for reconstruction work in Westlake Park; $31,800 for improvements, largely road building, in Griffith Park; $14,300 for wagons, tools, etc.

Oroville, Cal.—County Expert J. H. Anderson has recommended building of $20,000 hall of records.

Hartford, Conn.—Citizens have voted to spend $25,000 for erection of public comfort station; also to purchase old Daniel mill, which will allow enlarging of Bucknell Park and improvement of dam on Park River.

Macon, Ga.—Architect Alexander Blair has completed plans for remodeling jail.

Chicago, Ill.—Citizens have authorized $6,430,000 bond issue for parks and bridges.

Princeton, Ind.—Council has requested Clifford Shopbell, Evansville, architect, to submit plans for city building; cost, about $20,000.

Dunlap, Ia.—Citizens have voted to establish public library; council has decided to erect city hall.

Salina, Kan.—Council has rejected all bids received for erection of proposed $40,000 city building.

Middlesboro, Ky.—City will erect city hall, jail and fire department building and $30,000 Carnegie library.

Cadillac, Mich.—Wexford County has voted $50,000 bonds to erect court house.

Detroit, Mich.—City is considering installation of garbage disposal plant.—J. J. Haarer, Commissioner of Public Works.

Brownton, Minn.—Village will again vote on bonds for erection of city hall.

Duluth, Minn.—Board of Public Works and the Engineering Department are urging purchase of an automobile for combined use of the departments.

Winchester, N. H.—Citizens have voted to erect $2,000 town hall; plans being considered.

Cape May, N. J.—Plans are being drawn for pavilion to be built by city.

Long Branch, N. J.—Chairman Brown has recommended that dozen street signs and half-dozen receptacles for waste paper and other refuse be purchased.

Niagara Falls, N. Y.—Board of Public Works will investigate and report on different methods of disposal of garbage; city now dumps garbage through chute in Niagara River; desires communication with manufacturers of garbage disposal plants. —F. S. Parkhurst, Jr., City Engineer.

Columbus, O.—Council has passed the ordinance appropriating $43,000 for the equipping and installation of city clean-up department; will provide for construction of incineration plant and purchase of all equipment necessary for collection of rubbish, ashes and manure from about city.

Dayton, O.—City Inspector of Public Works Ed K. Parrish is preparing specifications for construction of the new comfort station at Pearl st. hay market.

Vian, Okla.—City is considering erection of $6,000 city hall.

New Brighton, Pa.—Citizens will vote on erection of city building at Sixth Ave. and Ninth St.

Baltic, S. D.—City has decided to erect city hall and fire station.

Salt Lake City, Utah.—Chief of Police S. M. Barlow has recommended installation of modern patrol signal box system in business center and at railroad stations at cost of $6,000.

Newport News, Va.—Plans for enlarging city jail in accordance with recommendations are now in preparation.

Pasco, Wash.—C. Lewis Wilson, Architect, Portland and Chehalis, will prepare plans and specifications for $20,000 city hall.

Spokane, Wash.—City Commissioners have concurred in recommendation from Commissioner of Safety Hayden providing for purchase of Packard automobile for $3,475 for police emergency service.

CONTRACTS AWARDED

Willimantic, Conn.—Foley & Henry have secured contract for city teaming.

Gloucester, Mass.—Water Commissioners have voted to purchase auto freight truck of White Steamer type at cost of $1,800.

Rochester, N. Y.—Building incinerating plant on river flats for disposal of rubbish, to Decarie Incinerator Co., Minneapolis, Minn., $82,950.

Troy, N. Y.—Erection of a brick and stone jail from plans of Wm. J. Beardsley, Poughkeepsie, to Chas. P. Boland Constr. Co., 30 4th st., $122,200; company agrees to install the Van Dorn lock device and to have the jail ready for use year from the date of contract; other bidders: Van Dorn Iron Co., Cleveland, O., $145,750; Nial Bros. Constr. Co., Troy, $142,140; Chas. Crowley Constr. Co., Troy, $144,441; Jas. Dollard Constr. Co., Troy, $145,387; Wm. E. Martin Co., Troy, $143,567, and Peter Keller Constr. Co., Albany (3 bids), dependent upon the kind of lock device to be used, $126,299, $127,199 and $127,180.

Scranton, Pa.—Cleaning paved streets, to John Booth, 55c. per thousand square yds.

Merrill, Wis.—Building Lincoln County Jail and sheriff's residence, to Torkelson & Hesterman, Merrill, general contract, $22,379; to Van Dorn Iron Works Co., Cleveland, O., cell work, $8,153; to Merrill Plumbing & Heating Co., Merrill, heating, $2,835; to F. A. Eagle, Merrill, plumbing, $3,335.26; to J. A. Staub, Grand Rapids, Wis., electric wiring, $523.80.—Foeller & Schober, Green Bay, Architects.

TOO LATE FOR CLASSIFICATION

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
			STREET IMPROVEMENTS	
Minnesota	Milaca	Apr. 17, 9 a.m.	Grading and repairing roads	A. J. Franzen, Town Clerk.
Ohio	Dayton	Apr. 17, noon.	Furnishing 10 carloads of asphalt	J. C. Ely, Dir. Pub. Service.
New York	Albany	Apr. 17, 3 p.m.	Grading, setting granite curb, paving with vitrified shale paving blocks, on concrete foundation, portion of West Lawrence st. also laying flag walks, sodding, building receiving basins and laying vit. pipe sewers, etc., under each sidewalk	Isidore Wachsman, Secy. Bd. C. & S.
New Jersey	Trenton	Apr. 18, 8 p.m.	Paving portion of Second street with sheet asphalt; also paving portions of various streets with filbertine	Harry B. Salter City Clerk.
Indiana	Indianapolis	Apr. 18, noon.	Constructing 5,400 yds. concrete walks and gravel roadway at Indiana State School for the Deaf	Richard O. Johnson, Supt.
Ohio	Cincinnati	Apr. 28, noon.	Constructing county road in Anderson township	Stanley Struble, Pres. Bd. Co. Comrs.
Ohio	Cincinnati	May 5, noon.	Improving Carthage avenue in Columbia township	Stanley Struble, Pres. Bd. Co. Comrs.
			SEWERAGE	
New York	Albany	Apr. 17, 3 p.m.	Constructing vitrified stoneware pipe sewers in portions of Quail street, Washington ave. and Livingston ave	Isidore Wachsman, Secy. Bd. C. & S.
Indiana	Indianapolis	Apr. 18, noon.	Constructing complete 1,500 ft. 20-in. vitrified sewer line, at State School for the Deaf	Richard O. Johnson, Supt.
New Jersey	Trenton	Apr. 18, 8 p.m.	Constructing drains in portion of Lalor street; and in Section 2, being portions of various streets	Harry B. Salter, City Clerk.
Montana	Glasgow	Apr. 19, 8 p.m.	Constructing sewers in Improvement Dists., Nos. 3, 4 and 5, in three separate bids	E. S. Severance, City Engineer.
Ohio	Massillon	Apr. 21, noon.	Constructing sanitary sewer in Front Street	Wm. A. Pietzcker, Dir. Pub. Serv.
Minnesota	Mankato	Apr. 24, 10 a.m.	Constructing 1,080 ft. of 20-in.; 725 ft. of 10-in. and 160 ft. of 12-in. pipe sewer and five manholes	A. H. Scherer City Clerk.
			WATER SUPPLY	
Minnesota	Alexandria	Apr. 20, 7:30 p.m.	Constructing water mains in Sixth avenue	C. J. Sundblad, City Clerk.
Pennsylvania	Lebanon	Apr 20	Furnishing one horizontal cross compound crank and fly wheel condensing opposed type pumping engine capacity 2½ million gals per 24 hours	J. D. Kerr, Secy. Bd. W. & L. Comrs
			BRIDGES	
Pennsylvania	Reading	Apr. 26, 10 a.m.	Constructing Bordner's Bridge No. 1, crossing the Tulpehocken and Bordner's Bridge No. 2 crossing the Swatara	County Commissioners.
Kansas	Lawrence	Apr. 15, noon.	Constructing two stone abutments and 32-ft. girder span	W. R. Green, Co. Clk. Douglas Co.
Pennsylvania	Washington	Apr. 27, noon.	Constructing necessary small bridges and culverts for improvement of various county roads	John M. Moffitt, County Comptroller.
			LIGHTING AND POWER	
Pennsylvania	Wilkes Barre	Apr. 24, 7:30 p.m.	Lighting certain streets in Plymouth township with 20 or more arc lights for the term of 5, 7 or 10 years	Martin Curley, Pres. Bd. Twn. Comr
			MISELLANEOUS	
Kansas	Hutchinson	Apr. 14, 3 p.m.	Sprinkling various streets for season of 1911	Ed. Metz, City Clerk.
Indiana	Grennfield	Apr. 19, 7:30 p.m.	Furnishing supply of steam coal for electric light and water works plant for one year, minimum consumption 2,000 tons —maximum 4,000	Ora Myers, Mayor.

Index to Advertisements

STREET IMPROVEMENTS

New Decatur, Ala.—City has sold $7,400 bonds for improvement of Moulton and Grant sts.

Spencer, Mass.—Town has appropriated $4,000 for highway, $600 for sidewalks and $1,000 for macadam improvements.

Binghamton, N. Y.—Plans for macadamizing Chenango st. from end of the brick pavement to city limits are being prepared by City Engineer John Giles.

Middletown, R. I.—Town has voted $2,000 for street repairs and $500 for oiling roads.

Seattle, Wash.—Widening pavement, 3d ave., to J. Ruthe, 301 12th ave., $3,351.75; concrete walks on 33d ave. N. W., to G. Hansen, 5312 6th ave. N. W., $12,419.20; replanking Stulshole ave. and 17th ave. N. W., to A. Bjork, $1,886.75.

WATER SUPPLY

Newark, N. J.—Bids will be received Apr. 19, noon, for $150,000 water bonds and $100,000 high pressure water bonds.—Tyler Pannly, City Comptroller.

Britton, Okla.—Citizens have voted $20,000 bonds for improvements to water and sewer systems.

Farmville, Va.—Citizens will vote Apr. 18 on $65,000 bonds to purchase water works and make needed improvements.

South Hill, Va.—Town is considering need of better water supply.

CONTRACTS AWARDED

Greenville, Tex.—To C. L. Witherspoon, Corsicana, for boring 8-in. artesian well to water-bearing sand, which was found in the first deep well bored at depth of 2,300 ft.; cost $6,000.

Tacoma, Wash.—Building two units of Green River gravity water system; pipe line, to Geo. P. Wright, $736,750.93: McMillan reservoir, to Maxham & Berne, $287,220.

LIGHTING AND POWER

Burlington, Ia.—Burlington Gas Light Co. will spend $10,000 this summer in putting in new gas mains to improve service.

Pottstown, Pa.—Establishment of municipal electric light plant is being urged.

Newport News, Va.—Council has unanimously adopted ordinance directing Judge Barham to order election on $150,000 bond issue for erection and installation of municipal electric plant in this city.

Marcus, Wash.—Proposition has been made by O. V. Gates, Hillsborough, Ore., to furnish light and water plant.

MISCELLANEOUS

Woodland, Cal.—Board of Supervisors is considering election on bonds to erect jail and court house.

Hagerstown, Md.—Mayor Scott has recommended need of municipal garbage incinerator to cost about $25,000.

Hammondsport, N. Y.—Town of Urbana and this village are considering erection of modern buildings for town and village purposes to replace town hall destroyed by fire.

Columbia, S. C.—City will erect at once on Lincoln St. building to be used as jail, police station and hospital. Shand & Lafaye, Architects.

Huntington, W. Va.—Board of Commissioners is considering purchase of auto patrol.

ANNUAL MEETING

The Annual Meeting of the Municipal Journal and Engineer, a Corporation organized under the laws of the State of New York, will be held at the Office of the Company, 239 West 39th Street, New York, at 10 o'clock A. M., April 17th, 1911.

A. PRESCOTT FOLWELL,
Secretary.

PROPOSALS

REINFORCED CONCRETE BRIDGE.

OFFICE BOARD PUBLIC WORKS,
Paducah, Ky.

Sealed proposals will be received at the office of the Board of Public Works until April 17th, 1911, at 10 A. M., for the construction of a reinforced concrete bridge 43 ft. wide and 295 ft. long.

Approximate quantities as follows:

Excavation	170 cubic yards
Linear feet concrete piling	3,720 feet
Concrete in piers, abutments and retaining walls	514 cubic yards
Concrete in arches, girders, columns, beams, floor and railing	767 cubic yards
Reinforcing steel in piles	77,600 pounds
Reinforcing steel in superstructure	115,366 pounds
Cast steel hinges	11,090 pounds
Lamp posts	8
Waterproofing	720 square yards
Cement sidewalks	4,380 square feet
Creosote wood paving blocks	920 square yards

Eighty per cent (80%) to be paid by the City of Paducah upon monthly estimates, and balance paid upon completion and acceptance of the work.

All the above material and work to be furnished and done in accordance with plans and specifications on file at the office of the City Engineer. Each bid must be accompanied with a certified check for $1,000.00, payable to E. J. Paxton, Treasurer, to be forfeited to the City of Paducah in case he shall fail to enter into contract in accordance with his proposal, should his proposal be accepted by the Board of Public Works. Any one desiring copies of plans and specifications can obtain same from the City Engineer upon the receipt of an accepted check for $5.00, payable to E. J. Paxton, City Treasurer.

Proposals must be made on blanks attached to the specifications.

The Board reserves the right to reject any and all bids; to waive any informalities, and accept any bid considered advantageous to the City of Paducah.

By order of the Board.

L. A. WASHINGTON,
City Engineer
(14-15)

Plans and specifications may be seen at the office of the Municipal Journal and Engineer.

WOOD BLOCK PAVING

Poughkeepsie, N. Y.

Sealed proposals will be received by the Board of Public Works, City of Poughkeepsie, until 4 o'clock p. m., Thursday, April 20, for creosote wood block pavement to the amount of 1700 square yards.

Address the Board of Public Works for contract and specifications.

R. J. SHIELDS,
Clerk.

BRICK PAVING

Hudson, N. Y.

Sealed bids will be received until 10:30 a. m., May 2, 1911, by the Secretary of the Commission of Public Works of the City of Hudson, N. Y., for furnishing material and labor necessary to relay approximately 5400 lin. ft. of curbstone and to pave about 13,800 square yards of street with vitrified brick.

Plans and specifications may be seen at the office of the City Clerk or the City Engineer.

The Commission of Public Works reserves the right to reject any and all bids.

WILLIAM WORTMAN,
City Clerk.
M. J. O'HARA,
City Engineer.

DISPOSAL OF REFUSE

Boston, Mass.

The Commissioner of Public Works of the City of Boston, Office, 66 City Hall, invites proposals for the disposal of refuse of the City of Boston, collected by the Public Works Department of said city, with the exception of the West Roxbury and East Boston districts, for a term of ten years from January 1, 1912, and giving bond therefor of a surety company approved by the Commissioner. The disposal of said refuse is to be done in a sanitary and inoffensive manner, satisfactory to the Commissioner of Public Works.

Bidders will submit their own proposals, together with plans of their proposed methods wtih their bids, properly filled out, signed by the bidder and left at said Office, 66 City Hall, before 12 o'clock m. of Monday, April 24, 1911. Each bid is to be accompanied by a certified check for ten thousand dollars ($10,000), payable to and to be the property of the city if the proposal after acceptance is not carried out, and will at said hour and place be publicly opened and read. Proposals must be made in duplicate, the duplicate, without check, to be deposited by the bidder with the City Auditor previous to the time named for opening the bids. The undersigned reserves the right to reject any or all proposals. The proposals should be inclosed in an envelope, sealed, and marked "Proposal for Disposal of Refuse."

L. K. ROURKE,
Commissioner of Public Works.
Boston, March 23, 1911.

SEWAGE DISPOSAL WORKS

Batavia, N. Y.

Sealed proposals will be received at the office of the Batavia Sewer Commission until 10 o'clock a. m. on the 15th day of May, 1911, for furnishing materials and doing all work as specified for the construction of Preliminary Settling Tanks of the Imhoff type, Sprinkling Filters and Sludge Drying Beds, including necessary fittings and appurtenances.

Plans and specifications may be seen at the office of Hering & Fuller, Consulting Engineers, 170 Broadway, New York City. The plans may be seen and specifications and forms of proposal obtained from Charles Hoopes, Resident Engineer, at the Office of the Sewer Commission in Batavia, N. Y.

A full set of blue prints and specifications, including bidding sheets, will be forwarded to any applicant, express prepaid, upon the receipt of a deposit of $5.00, which will be returned upon the return of the blue prints in good condition. Each bid must be accompanied by a certified check on a solvent Bank for 5% of the amount bid.

The Board of Sewer Commissioners of the Village of Batavia reserves the right to reject any and all bids, to waive any informality in the bids received, and to accept any of which it deems to be most favorable to the Village of Batavia. Unbalanced bids will be rejected without consideration.

K. B. MATHES,
Chairman Board of Sewer Commission.
Attest,
JOHN H. WOOD,
Clerk Board of Sewer Commission.
(12-19)

PAVING AND BRIDGES

Bradford, Pa.

Sealed proposals will be received for constructing two bridges and the paving of one street; 3 items; $200 certified check with each. Address B. A. Wise, City Engineer. Bids close May 1, 5 P. M.

E. C. CHARLTON,
City Clerk.